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THREE ESSAYS ON CROSS-BORDER SYNDICATED LOANS:

EVIDENCE FROM DEVELOPING COUNTRIES

Xiaotian Wang, MSci

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Table of Contents

Abstract.....3

I. **Chapter 1**.....7
1. Introduction.....7
2. A Brief Overview of Banking in China.....10
3. Loan Syndication Characteristics and Hypothesis Development.....11
4. Data and Methodological Approach.....18
5. Results.....26
6. Conclusions.....37
References.....39
Appendix.....44

II. **Chapter 2**.....47
1. Introduction.....47
2. Literature review and hypotheses development.....49
3. Data and Methodology.....54
4. Summary Statistics.....59
5. Results.....61
6. Conclusions.....71
References.....72
Appendix.....76

III. **Chapter 3**.....79
1. Introduction.....79
2. Literature review and hypotheses development.....82
3. Data and Methodology.....85
4. Summary Statistics.....90
5. Results.....92
6. Conclusions..... 97
References.....98
Appendix.....101

Conclusion.....107

Acknowledgement.....109

Abstract

Nowadays, a key policy issue facing the monetary and financial regulation authorities is the impact of cross-border capital flows. The global financial crisis has highlighted the role of financial integration and development worldwide in triggering financial distress and instability. Strengthened regulation of cross-border banking behaviours, which usually bear pro-cyclical nature and generate risks, has become necessary for governments to fend off domestic and global financial stability in the age of an integrated world economy. Compared with FDI and equity financing, credit flows are less favourable to efficient risk sharing and more prone to destabilizing, thus they deserve more regulatory attention. Given academic and policy attention attached to cross-border syndicated loans is relatively insufficient in contrast with the significance of such financing channels in the global market, my thesis aims to fill the gap and study the determinants and impact of cross-border syndicated loans, one of the main components of cross-border capital flows. Research on the issue could help policy makers to keep better track of gross cross-border capital flows, enhance global coordination over financial regulation, and help businesses and banks to better understand potential risks and consequences when choosing SLs as a financing method.

The first chapter is based on evidence from China, the world's second largest economy where banks are increasingly using syndicated lending (SL) to develop cross-border business. In the first chapter we examine the determinants of cross-border SL from China during the period 2006-2014, across 68 countries. The results show that expected credit risk is one of the main drivers of Chinese banks' overseas syndication but that there are additional drivers, including government ownership, free riding, compensation for limited physical presence in borrower countries, the lowering of information asymmetries and diversification of the lending portfolio. We also find that Chinese banks prefer to

group together in a syndicate rather than partner with a foreign-owned bank, and they demonstrate different motivations when extending SLs to developed and developing countries. The findings bear implications for banking regulators and policy makers witnessing inbound and outbound Chinese capital flows for financing companies and projects, and highlight potential fluctuations and uncertainties in the global financial market when Chinese banks adjust their portfolio and risk measurement to comply with the newest Basel regulatory rules.

The second chapter investigates whether foreign syndicated loan announcement is good news or bad news for firms in emerging economies. Syndicated credits have become a key source of global finance, and such lending has become a main arena where lenders expand their activities into global markets and internationalize their business. The existent literature neglects, however, the significance of syndicated loans in cross-border capital flows and their effects on the market performance of borrowers. The research question of how emerging capital markets would respond to syndicated loan announcements that involve foreign banks would be our focus in this chapter. This question is particularly pertinent if we consider that syndicated loans are developed around arrangers that were appointed by the borrowers themselves. Our research aims to fill the gap and examine whether and how receiving syndicated loans would affect the market performance of borrowers in developing countries, by analysing syndicated loans announcements of publicly listed firms in 15 emerging economies from 1998 to 2016. The results generated by using event study methodology suggest cross-border syndicated loans trigger significant negative market response to the borrowers' stock return. Thus, borrowers should be prudential when taking foreign syndicated loans as one of their major financing methods. Furthermore, policy makers and regulators from developing countries should take this potential negative influence into account before welcoming the rapid development of cross-border syndicated loans.

The third chapter studies how the national culture of a developing country affects banks' decisions to extend cross-border SLs into that area, by analysing loans extended by major banks from G20 countries from 2000 to 2017. We proxy national culture by adopting the Hofstede model that consists of six dimensions: power distance that expresses the degree to which the less powerful members of a society accept and expect that power is distributed unequally; individualism versus collectivism; masculinity versus femininity (or tough versus tender cultures); uncertainty avoidance; long term orientation versus short term normative orientation; and indulgence versus restraint. A multilevel linear regression method is used to investigate the potential association with national culture, while controlling for other macro-level, transaction-level and bank-level variables. We collected records of cross border syndicated loans extended by G20 banks to 22 developing countries from 2000 to 2017, and applied a multi-level linear regression to investigate the relation between loan amount and cultural features of borrower countries, while controlling for transaction and bank level variables. The key findings are cultural dimensions of borrower countries play a significant role in receiving funds via overseas syndication, as developing countries with higher preference of a loosely organized society that prioritizes individualism, uncertainty avoidance, masculinity, short term effects and indulgence, tend to obtain more overseas syndicated loans from major G20 banks.

To sum up, by analysing empirical evidence from emerging economies and the G20 community, which include the main entities subject to intensified global financial integration and upgrades of the Basel rules, my thesis aims to fill the gap of determinants and impact of cross-border syndicated loans, and raise policy makers' awareness to monitor gross cross-border capital flows through this channel and enhance global financial regulatory cooperation, while providing implications for businesses and banks to evaluate potential risks and consequences when considering SLs as a financing option.

Keywords: Banking; Syndicated Lending; Cross-border Loans

JEL Classification: F65; F34; G21

I. Chapter 1

Investigating the Drivers of Chinese Bank Cross-border Syndicated Lending

1. Introduction

Syndicated loans (SLs) are jointly extended by multiple banks, with lead banks retaining a portion of the loan themselves and managing junior banks (or participants) that contribute based on specified terms. The syndicated lending (SL) market has grown significantly over the past few years, with volume worldwide rising 160% to $3.5 trillion between 1995 and 2012. More recently, the China Banking Association reported that by the end of June 2016 outstanding SL by Chinese banks stood at 6.01 trillion Yuan ($919.4 billion) – up from 377.2 billion Yuan ($57.4 billion) the previous year. The Association also noted that SLs took up 11.35% of total corporate bank lending – an increase of just under 10% in a decade. Data from the Bank for International Settlements show that SLs have become a key source of global financing, with the international SL market taking up around a third of total international financing (see Gadanecz, 2004). Interestingly, SLs differ from most other financial products, as firms of various credit spectrums – no matter whether they are private companies, rated or not rated, high yield or not – all access this form of financing (Sufi, 2007).

Despite such growth, there remains a dearth of research on cross-border SLs, particularly with regard to the drivers of bank globalization and cross-border capital flows. Moreover, studies that do examine overseas SLs tend to ignore many elements of the process. For example, the existing literature focuses on SL and the role of relationship banking (Dennis and Mullineaux, 2000; Gadanecz, 2004), information asymmetry (Boot, 2000; Cerutti *et al*, 2015), bank networks

(Champagne, 2014; Sufi, 2007), bank balance-sheet strength (Simons, 1993; Blank and Buch, 2010; Cerutti *et al*, 2015), corporate ownership structure (Lin *et al*, 2012) and borrower country characteristics (Godlewski and Weill, 2008; Cerutti *et al*, 2015). Few studies examine credit risk and bank lending behaviour. Our paper aims to (at least) partially correct for this by concentrating on the effect of bank asset quality and credit risk level on the decision to participate in the cross-border SL market.

The massive expansion and globalization of the Chinese manufacturing sector have been underpinned by the Chinese banking sector, which has provided more than 60% of the financing. This has led to Chinese commercial banks themselves becoming increasingly global. For example, foreign assets of the four largest state-owned banks grew from $379 billion to $825 billion between 2008 and 2012[1]. At the same time, overseas loans at the top five Chinese banks doubled to $538 billion between 2010 and 2013 [2]. Ownership, credit constraints, risks, efficiency and possible financial distress have been increasingly scrutinized against a backdrop of the rapidly growing domestic economy, rising asset bubbles, debt problems and shadow banking activities. Chinese banks' increasing exposure to global financial markets and international regulation adds to the complexity and affects the world economy. China's state banking authorities have also encouraged the exploration of overseas markets and the development of cross-border banking business. As an official of the China Banking Regulatory Commission remarked:

> As more and more Chinese firms are going overseas and the Chinese economy is more integrated into the international market, we need to increase the amount and range of cross-border SL to promote international cooperation and back up national strategies such as 'One Belt and One Road'[3].

[1] Data compiled from the annual reports of Industrial & Commercial Bank of China Ltd, Bank of China Ltd, China Construction Bank Corporation, and Agricultural Bank of China Ltd.

[2] Data compiled by Thomson Reuters.

[3] Reported by the China Securities Journal on April 5, 2016. The Chinese government

Despite all of this, whereas the attention attached to the expansion of Chinese firms' outbound foreign direct investment has increased considerably, interest regarding Chinese cross-border banking activities has remained low.

Our paper examines the main drivers of Chinese banks' overseas SL. We examine and test several drivers derived from the existing literature and complement these with additional factors, including credit risk. Past studies have suggested that lender balance-sheet strength is a major catalyst for SL (Simons, 1993; Cerutti *et al*, 2015); that adjustment of cross-border loan positions is significantly related to macro-level characteristics such as bilateral trade (Blank and Buch, 2010); and that geographical and cultural proximity positively affect cross-border bank loans (Kleimeier *et al*, 2013). However, although some tentatively examine credit risk and SL (Simons, 1993), few studies consider bank credit risk as a major driver of SL decisions.

Our study therefore places a unique emphasis on whether there exists a significant relationship between bank credit risk and overseas SL exposures. We do this by examining relationships between lenders' credit risk proxies and the amounts extended via SLs. The paper contributes to the literature on several levels. Firstly, we add to the existing studies on banks' decisions to extend SLs. Secondly, we provide new evidence on cross-border lending by Chinese banks. To the best of our knowledge, this is the first empirical study of China's overseas lending activities. Finally, our findings bear important implications for policymakers regulating inbound and outbound Chinese capital flows for supporting companies and projects.

We begin our paper by examining the Chinese financial system and bank development in Section 2. We next consider the potential

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launched the Belt and Road initiative in 2013 to promote trade and infrastructure and increase connectivity among countries across Asia, Europe and Africa. Based on the ancient trade network of the Silk Road that connected China to the Mediterranean Sea, the initiative is comprised of the Silk Road Economic Belt and the 21st-century Maritime Silk Road.

contribution of our research to the existing literature and develop our hypotheses in Section 3. Section 4 presents our data and methodology. Section 5 discusses our results and Section 6 provides concluding comments.

2. A Brief Overview of Banking in China

Political influence has always been one of the defining characteristics of the Chinese banking system. Bailey *et al* (2011) argue that China's banks remain largely constrained by government intervention at various levels and that state-controlled banks' loan decisions are based on inside information and the influence of the prospective borrower(s). Firms that perform poorly tend to obtain funds from banks, as these loans are intended to help companies in trouble and keep them out of difficulty (Bailey *et al*, 2011). This is further evidenced by the work of Liang *et al* (2013), who report that the degree of bank boards' political connections is negatively correlated with both bank performance and asset quality.

However, there are those who question the level of domestic political influence. Fu and Heffernan (2009) argue that state-owned commercial banks were set up to minimize costs, that the Commercial Banking Law issued in 1995 required all banks to maximize profit and that government interference may be no different from that experienced by banks in other countries. In addition, all major commercial banks in China have been listed publicly and are required to operate commercially, to be accountable to investors and to disclose information regularly. Comparing China's "Big Four" banks with the top four US banks in terms of size, growth rate, liquidity risk, profitability, efficiency and capital adequacy, research by Baradwaj *et al* (2008) claims that the Chinese banking reforms started in 1998 have successfully prepared Chinese lenders to enter the international market. However, compared with their western counterparts, Chinese banks continue to generate lower returns with higher calculated financial

risks (Li *et al*, 2001). Studies have found that there remains very low profitability within the state-owned commercial banking sector – mainly due to higher non-interest expenses and lower interest margins (Li *et al*, 2001).

There remains little evidence that Chinese banks' overseas SL activities are determined by political forces and may be used to help compensate for inefficient and politically biased domestic lending. The SL market is competitive and involves large and systemically significant lenders and borrowers, and Chinese banks that extend overseas loans are subject to international market operations and regulations – which may also help to diversity political influence within domestic lending activities (Iosifidi *et al*, 2015).

3. Loan Syndication Characteristics and Hypothesis Development

SLs bear the characteristics of both relationship banking loans and disintermediated debt. Essentially, they sit somewhere between the two (Dennis and Mullineaux, 2000; Gadanecz, 2004). Building up relationships with borrowers is generally regarded as an effective solution to the asymmetric information problems associated with lending. In many cases asymmetric information hinders the loan market by generating unseen lending risks that lead to both adverse selection and moral hazard (Boot, 2000; Stiglitz and Weiss, 1981). In banking, adverse selection describes a situation in which risky borrowers accept a higher rate of interest because they know they have a lower chance of a project succeeding and so will generate a lower probability of repayment. The building of relationships reduces asymmetric information and increases trust between lender and borrower. This is one of the main reasons for the growth of SLs, which have many characteristics similar to those associated with relationship bank lending. SLs develop when lenders initially have limited

information about borrowers but trust their partner banks. As Cerutti has observed:

> Syndication offers the possibility to benefit from the lead bank's knowledge of the borrower and expertise lending to a given market; by contrast, bilateral lending requires costly market research and relationship-building. (Cerutti *et al*, 2015)

In the domestic US banking sector Sufi (2007) finds evidence that information asymmetry affects syndicate structure and composition in a way consistent with reducing moral hazard. Sufi also finds that when information asymmetry is potentially severe participant banks tend to be closer to the borrower, both geographically and in terms of previous lending relationships, and that a lead bank's and a borrower's reputations reduce asymmetry issues. In addition, Sufi highlights the role of lender alliances, the dynamics of such alliances and their influence on future syndicated lending. Previous relationships between a lead arranger and potential participants affect future alliances between banks. Champagne and Kryzanowski (2007) find that syndicate lender participation is as strongly determined by previous lead-participant (same-role-ordered) relationships as by borrower-participant relationships. McCahery and Schwienbacher (2010) find that lead arrangers' reputation increases the SL spreads and top tier arrangers keep larger fractions of loans in their syndicates.

With regard to cross-border lending, Cerutti *et al* (2015) argue that information asymmetry will be heightened by the economic, cultural and geographical differences between lenders and borrowers. They interpret geographical and cultural proximity and bilateral trade as proxies for information asymmetry. SL may be motivated by attempts to reduce this but also by the chance to exploit opportunities, as banks will syndicate with local banks that have knowledge of local borrowers. Examining the composition and drivers of cross-border bank lending between 1995 and 2012, Cerutti *et al* (2015) find evidence that increasing use of SL lowers information asymmetries.

This is further evidenced by Kleimeier, Sander and Heuchemer (2013), who emphasize the role of geographical and cultural proximity in cross-border bank loans by examining cases between European countries. They find that, although the banking market has been integrated, the geographical and cultural proximity of European countries is a major factor that affects cross-border bank loans and deposits. Using gravity models to study capital flows, Herrmann and Mihaljek (2013) and Portes and Rey (2005) also highlight the significance of distance.

Accordingly, our first hypothesis tests the argument regarding information asymmetry by using geographical distance and bilateral trade between China and borrower countries as proxies. We include whether a borrower firm is private or public to measure the information availability related to each loan deal. As we exclude loan destination countries that speak Chinese (such as Hong Kong, Macau and Taiwan), cultural proximity is measured by geographical distance. A language dummy, widely used in the literature, is not required. We test the following:

Hypothesis 1: *High levels of information asymmetry between Chinese banks and potential borrowers will stimulate the use of cross-border SLs.*

Our next hypothesis builds further on the approach of Champagne (2014), who studies an international network of SL lenders by using network theory. Champagne finds that networks demonstrate an "unholy trinity"[4] of structural properties that contribute to robustness and stability:

> Specifically, lender networks have high complexity and connectivity, have a small-world structure characterized by proximity and clustering and also display scale-free characteristics with preferential attachment. (Champagne, 2014, page 148)

[4] "Unholy trinity" describes a series of characteristics of many financial works such as "high and rising degrees of interconnection, long-tailed degree distribution and small-world properties" (Champagne, 2014).

In light of this, we take the bank alliance in the same transaction into account and add an explanatory variable to represent bank clustering within each syndicate. We expect Chinese banks to have complex and cohesive networks among themselves in a market with government intervention. We expect foreign banks might be regarded as "outsiders" instead of cooperative peers with which Chinese banks prefer to share information easily. We test the following:

Hypothesis 2: *Clustering with Chinese banks is associated with higher cross-border SLs extended by Chinese banks.*

Chinese banks' management of credit risk has become particularly significant since China joined the G20. The country's banking system must now adhere to the unified supervision standards emanating from Basel. The newly formed Basel III framework includes a set of reform measures to strengthen banking supervision and risk management, emphasizing four principal regulation tools (capital adequacy ratio, leverage ratio, provision ratio and liquidity ratio). Various studies (Admati *et al*, 2011; Miles *et al*, 2013; Fernandez and Gonzalez, 2005; Barth *et al*, 2004) show that stringent regulation requirements affect banks' risk preference and credit risk levels. The pressure to comply with international regulatory standards will continue to increase and could drive – or may even have unintended effects on – Chinese banks' SL decisions.

The situation is further complicated by the complexity of the Chinese banking system and recent credit risk concerns linked to the behaviour of government and regulators. As we have already remarked, Chinese banks are constrained by government intervention and in some cases are forced to loan to underperforming firms, so generating credit risk issues. This may drive Chinese banks into the SL market, which is more competitive than its domestic counterpart and, as stated previously, is populated by sizeable and significant lenders and borrowers (Iosifidi *et al*, 2015).

This being the case, Chinese lenders may be taking advantage of the SL market to diversify risk and could be making SL decisions based on their rising domestic credit risk level. International SLs allow Chinese banks to conform to Basel's more stringent regulatory standards. Admati *et al* (2011), Miles *et al* (2013) and Fernandez and Gonzalez (2005) examine the relationships between financial regulation and bank risk and find that strict capital requirements tend to reduce bank risk-taking. Barth et al (2004) also report that higher regulatory capital requirements are associated with fewer non-performing loans. However, these studies fall short of investigating the relationship between Chinese banks' credit risk levels and levels of overseas SLs.

The phenomenon of adverse selection and moral hazard also tends to leave banks vulnerable to credit risk. Banks have a variety of techniques to both measure and manage credit risk, with one common approach being the geographical diversification of exposures. Portfolio diversification is one reason why banks prefer syndication, and SLs provide the opportunity to exploit a lead bank's knowledge of a borrower and any lending characteristics in a given market. Borrower country characteristics are therefore relevant to banks' decisions to extend cross-border loans (Cerutti *et al*, 2015). SLs may be motivated by Chinese banks' access to markets outside their traditional sphere of business, allowing banks to spread credit risk exposures with a view to reducing the probability of bank failure and to smoothing net income (Cerutti *et al*, 2015; Godlewski and Weill 2008). In addition, concerns regarding capital constraints and (a lack of) diversification have also been found to stimulate a move into SLs (Simons, 1993). We therefore expect a positive association between bank credit risk levels and overseas SL exposures.

There have been only a few studies linking SLs with the credit risk of lenders. Iosifidi *et al* (2015) use SL deals to study the effect of banks' credit risk and capital on firms' risk and performance. They find that banks with higher credit risk – measured by indicators such as

impaired loan ratio and loan loss provisions ratio – are associated with more risky firms with lower profitability and market value. In addition, banks with higher risk-weighted capital ratios tend to lend to riskier firms with less market value (Iosifidi *et al*, 2015). Aiming simply to identify the lending channels between banks and firms, we test the following:

Hypothesis 3: *Chinese banks with higher credit risk levels extend higher cross-border SLs.*

In contrast to the notion that credit risk is driving banks' move into SL, Simons (1993) argues that bank balance-sheet strength is a major driver in the US. Simons' results provide evidence that banks holding less capital face constraints regarding additional lending and that SL is a route to making profitable loans without having to increase levels of capital or significantly affect liquidity. Evidence is again provided by Cerutti *et al* (2015), who use a sample where on-balance-sheet SL exposures account for nearly a third of total cross-border loan exposures. They find that banks with lower levels of capital prefer SLs to other kinds of cross-border loans. They also report that bank balance sheets play a more significant role for SL exposures than borrower risk profiles, which are more important for non-SL exposures (Cerutti *et al*, 2015). Quantifying banks' balance-sheet strength by using banks' capital ratio and total assets as proxies for capital level and size, we test the following:

Hypothesis 4: *Smaller Chinese banks with capital constraints are more active in cross-border SL.*

Ownership is another characteristic cited in the literature as a major factor in determining Chinese banks' lending behaviour (Allen *et al*, 2007; Amighini *et al*, 2013; Zou and Adams, 2008) and internationalization strategies (Grosse, 2006; Minda, 2007). With regard to Chinese banks' overseas expansion, as one would expect, state

ownership seems to be an important factor, as the internationalization of Chinese banks is generally led by major state-owned banks – mirroring their dominance in the domestic financial market. Furthermore, in recent years China's banking regulators have urged banks to channel more funds into Chinese overseas projects, and banks with a bigger share of state ownership are in a stronger position to do this. We therefore test the following:

Hypothesis 5: *The proportion of state ownership in a Chinese bank is positively associated with the amount of cross-border SL.*

We also propose that country-level variables, which take into account any local characteristics, may drive banks' participation in SLs, especially if banks believe that SLs will provide them with a market advantage. Examining loans extended to borrowers in emerging economies, Godlewski and Weill (2008) argue that financial developments, structures, imperfections and legal entities in a bank's domestic country will all drive banks into SL market participation. They also argue that banks tend to lend less to countries with more efficient stock markets; such countries usually also have more developed financial institutions, creditor rights and rule of law. Godlewski and Weill further find that rule of law is negatively linked to an SL decision, which suggests better protection of creditor rights and stronger law enforcement hinder the decision to syndicate, and that borrower country characteristics – including the level of development, economic size and capital account openness – are less important in driving SL activity than they are in driving non-SL activity.

Galindo *et al* (2003) find that foreign bank penetration is greater when source and host countries have more legal and institutional similarities, as differences increase entry costs and hamper banks' capability to expand abroad. For example, differences in legal origin reduce bilateral participation in the banking system by nearly 11%. Galindo *et al* also find no evidence to prove the existence of asymmetries in adapting to

"better" or "worse" institutional/legal environments. Given this, we test the following:

Hypothesis 6: *Greater institutional proximity between China and a borrowing firm's country is associated with higher cross-border SLs extended by Chinese banks.*

4. Data and Methodological Approach

We use Thomson One Banker to examine overseas SLs extended by Chinese banks and/or their subsidiaries. We include SLs that have at least one Chinese bank as part of a group of lenders worldwide. We filter our dataset to identify overseas SLs extended by major Chinese commercial and policy banks. We include specific borrower firms (but exclude those based in Taiwan, Hong Kong and Macau) and 12 banks.

Ten of the banks are commercial banks: Agricultural Bank of China, Bank of China, Bank of Communications, China CITIC Bank, China Construction Bank, China Everbright Bank, China Merchants Bank, China Minsheng Bank, Industrial & Commercial Bank of China and Shanghai Pudong Development Bank. The two policy banks are China Development Bank and Export-Import Bank of China. Together, the commercial banks represent 84% of the total market capitalization of China's 25 mainland-listed banks. During our chosen timeframe, 2006-2014, 68 countries/regions receive loans from Chinese banks. The mean SL amount is $123.21 million. The average ratio of non-performing loans is 1.02%.

As multiple banks could be involved in one observation, we follow the approach of Cerutti *et al* (2015), Giannetti and Laeven (2012) and Hale (2012) and divide loan volumes equally across syndicate participants to calculate each bank's loan exposure from non-zero cross-border SL deals. Using loan volumes, we start by constructing the cross-border SL exposures of each bank vis-à-vis each borrower. After division and cleanup (with data checked to rule out repeated observations, as there

are multiple banks that have a name containing the string "Bank of China", as well as banks from Taiwan with names including "China" or "Chinese"), we have a sample of 1,264 cross-border SL deals. Individual lender characteristics are sourced from the BankScope database and the China Banking Regulatory Commission, while data on borrower country characteristics come from the Chinese General Administration of Customs, and World Bank statistics (Table 1). We also collect information on whether a borrower firm is private or publicly listed.

We follow the linear model approach of previous studies to observe motivations behind SL lending behaviour and to compare our results (Cerutti *et al*, 2015; Iosifidi *et al*, 2015; Esty and Megginson, 2003; Champagne and Kryzanowski, 2007; Lin *et al*, 2012). Pooled OLS regressions are used to control for year and country, and we add bank dummies for fixed effects and include a general error term. The regressions are estimated in the following form:

$$\log(LoanAmount_{ijtd}) = \alpha + X_{ijtd}\beta_1 + Y_{jt}\beta_2 + Z_{it}\beta_3 + \tau_{qt}\beta_4 + \lambda_t + \mu_{it} + \varepsilon_{ijt}$$

Lenders are indexed by j, borrower firms by q, borrower countries by i and SL transactions by d. The dependent variable $\log(LoanAmount_{ijtd})$ is the natural logarithm form of the loan amount extended by each Chinese bank in an SL transaction; X_{ijtd} is a set of deal characteristics; Y_{jt} is a set of time-varying lender characteristics; Z_{it} represents time-varying country characteristics; τ_{qt} is a set of borrowing firm characteristics; λ_t represents year fixed effects; μ_{it} represents country fixed effects; and ε_{ijt} is the error term. The regression sample includes all of our selected 12 banks and 68 borrower countries.

Dependent variable

The dependent variable is the loan contribution of each Chinese participant bank involved in a single lending transaction (in natural logarithm form). We divide loan volumes equally across syndicate participants to create bank-specific loan exposures, and the loan values are presented in real terms after deducting inflation. To convert deal amounts denominated in non-dollar currencies to US dollars, we use the exchange rate as determined by the national authority or the rate determined in the legally sanctioned market.

Independent variables

The independent variables are divided into two groups: explanatory variables and control variables.

Explanatory variables:

Information asymmetries: Here we again follow the approach of Cerutti *et al* (2015). We use bilateral trade and geographical distance, data for which is obtained from the Trade General Customs Administration of China. We use the sum of both import and export value ($Trade_{it}$) to measure trade relations between China and a borrower country.

Real values are used after deducting for inflation for all the above variables. The national logarithm is applied to allow for comparability. For each SL deal, a dummy variable is included as an independent variable to take account of whether a borrower firm q is private or public, which allows us to make observations on the type of organisation participating in SLs and to see if information transparency on a borrower's ownership structure affects or skews Chinese banks' motivation to extend SL.

Bank network: In line with Champagne (2014) and Sufi (2007), for each recorded loan deal, whether the loan was extended together with at least one foreign bank (foreign $banks_{ijt}$) is included as an

independent variable. This allows us to take into consideration the role of bank alliances and networks.

Table 1: Variable definitions and sources

Variable Name	Definition	Source
Dependent variable		
Loan amount	Natural logarithm of the loan amount in million US dollars extended by each Chinese lender to one single borrower as a part of a syndicated loan	Thomson One Banker
Explanatory variables		
Information asymmetries		
Private company	Dummy variable equal to one if the borrower firm is a private company	Bloomberg
Trade	Natural logarithm of the sum of China's export value to the borrower country in real term, and China's import value from the borrower country in real term, in US dollars	Chinese General Administration of Customs
Distance	The geographical distance between capitals of borrower country and China, measured in thousand kilometers.	World Bank
Bank network		
Foreign banks	Dummy variable equal to one if the loan was lent together with at least one foreign bank	Thomson One Banker
Bank credit risk		
Non-performing loans	Ratio of impaired loans to gross loans	Bankscope
Loan loss provisions	Ratio of loan loss provisions to net interest revenue	Bankscope
Bank balance sheet strength		

Bank size	Natural Logarithm of the total assets in US dollars of the Chinese bank for each observation	Bankscope
Bank capital	Ratio of total bank capital to total assets	Bankscope
State ownership		
Bank Ownership	Percentage of shares held by the state and Central Huijin Investment Co Ltd to total shares by the end of each year	Bankscope
Institutional proximity		
Difference in Rule of Law	Difference between borrower country and China in rule of law index, in absolute value	World Bank
Control variable		
M2/GDP (borrower)	The ratio of M2 (money and quasi money) against GDP of the borrower country in real term	World Bank
Variables for Robustness Checks		
Real interest rate	Real interest rate of borrower country, in percentage form	World Bank
Difference in regulation quality	Difference between borrower country and China in regulatory quality index, in absolute value	World Bank

Bank credit risk: To account for credit risks, we follow Iosifidi *et al* (2015) and use the impaired loan ratio and loan loss provision ratio against net interest revenue as a proxy for the amount of credit risk at each Chinese bank. The loan loss provisions are more forward-looking and represent the amount banks have set aside for any future loan defaults (Iosifidi *et al*, 2015).

Table 2: Summary of variables

Variable	Obs.	Mean	Std. Dev.	Min	Max
Loan amount	1,264	123.30	778.18	0.17	24000

Foreign banks	1,264	0.93	0.26	0	1
Private company	1,264	0.61	0.49	0	1
Bank ownership	1,264	69.15%	0.16	0	100%
Bank capital	1,210	13.65	2.20	10.69	32.96
Non-performing loans	1,213	1.03%	0.45	0.05%	3.79%
Loan loss provisions	1,261	13.50%	0.13	-7.81%	92.59%
Bank size	1,262	2142.66	966.02	5.57	3368.19
Trade	1,264	152683.60	171766.10	55.75	556946.30
M2/GDP (borrower)	1,137	105.79	44.20	20.16	251.25
Difference in rule of law	1,264	1.61	0.79	0.01	2.44
Distance	1,264	8.17	3.91	1.38	19.22
Real interest rate	1,205	3.78	5.68	-6.43	43.50
Difference in regulation quality	1,264	1.45	0.74	0.00	2.50

Bank balance-sheet strength: To consider the influence of bank capital in SL, we follow the approach of Simons (1993), Cerutti *et al* (2015) and Blank and Buch (2010). For each bank j, we use the total capital ratio to proxy for balance-sheet strength and the natural logarithm of total assets to take account of bank size.

State ownership: To test the impact of bank ownership, we use time-varying data on ownership, measured by percentage of total shares held by the state and Central Huijin Investment Co Ltd at the end of each year.

Institutional proximity: We select one of six Worldwide Governance Indicators compiled by the World Bank and calculate the difference between each selected country and China, taking absolute values. The

Worldwide Governance Indictors programme provides a consistent and widely accepted measure of governance among different countries by capturing six key dimensions: voice and accountability; political stability and lack of violence; government effectiveness; regulatory quality; rule of law; and control of corruption. The measure of rule of law (rule of law$_{it}$) reflects:

> ... difference in perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police and the courts, as well as the likelihood of crime and violence[5].

We select rule of law as a proxy for all the governance indicators to measure institutional proximity. We believe this is more relevant to cross-border loan deals than other indicators and avoids issues with multicollinearity. In addition, we use the difference of the regulatory quality indicator between China and a borrower country (regulation$_{it}$) to check the robustness of our results.

Control variables:

To proxy for local banking opportunities, we follow Nigh *et al* (1986), Goldberg and Johnson (1990) and Yamori (1998) by using local per capita GDP (GDP per capita$_{it}$). As GDP per capita has a relatively high correlation with the difference in rule of law (0.85) and the difference in regulation quality (0.83), we use the ratio of M2 to GDP, which indicates the extent to which local residents use financial institutions, as a substitute for measuring local banking opportunity (the primary correlation results are shown in Appendix 1). In order to test for robustness, the real interest rates of borrower countries and the difference in regulation quality between China and a borrower country are calculated.

[5] The definition is from the World Bank website. http://info.worldbank.org/governance/wgi

Table 3: Summary of loan amounts (in million US dollars)

Year	Mean	Std. Dev.	Freq.
2006	24.03	22.81	16
2007	44.68	42.51	18
2008	115.28	166.69	17
2009	302.39	455.44	26
2010	268.25	1321.80	68
2011	91.12	117.49	130
2012	109.36	276.44	184
2013	61.53	106.43	316
2014	153.76	1125.71	489
Total	**123.30**	**778.18**	**1,264**

Our robustness checks analyze our results' sensitivity to sub-samples such as advanced economies and emerging market economies and additional country characteristics of real interest rates and regulation quality. Probing different sub-samples is necessary, as previous studies argue that banks, whether in developing or developed economies, tend to have different motives for getting involved in SL deals (Haselmann and Wachtel, 2011). In addition, previous studies such as De Haas *et al* (2012) suggest that there is substantial fluctuation in cross-border lending and significant changes in the behaviour of lenders before and after the recent financial crisis. Since the majority of our observations are recorded after the crisis, we do not adopt the post-crisis adjustment developed by Cerutti *et al* (2015) and Iosifidi *et al* (2015).

As with all studies, our research does have limitations. Most importantly, due to heterogeneous characteristics between SLs and traditional bilateral loans, our results cannot be extrapolated to cover the total cross-border loans extended by Chinese banks. Cerutti *et al* (2015) argue that, although SL exposures fluctuate together with total cross-border lending, the share of SL exposures for different countries and time periods demonstrates a high level of heterogeneity. Furthermore, as Chinese banks reshaped themselves through market-

oriented financial reform in the late 1990s and have accelerated their overseas expansion in recent years, our sample size remains relatively small, with an imbalanced pool of observations highly skewed towards the post-crisis period.

5. Results

To recap: we use a pooled OLS model with country and year fixed effects to test each of our hypotheses in line with the work of Cerutti *et al* (2015), Iosifidi *et al* (2015), Esty and Megginson (2003), Champagne and Kryzanowski (2007) and Lin *et al* (2012).

Our regression results in Table 4, column 1, show that trade relations between China and borrower countries have no significant impact on levels of SL. This finding contrasts with the significantly positive results found by Kleimeier, Sander and Heuchemer (2013) and Cerutti *et al* (2015).

Geographical distance has a clearly positive effect, with a coefficient of 0.039 at a 1% significance level. This indicates that Chinese banks tend to lend more to countries farther from China. Such a positive correlation contradicts Kleimeier, Sander and Heuchemer (2013), Herrmann and Mihaljek (2013) and Portes and Rey (2005), all of whom focus on general cross-border capital flows rather than on SLs, and Cerutti *et al* (2015), whose non-China-specific findings suggest that trade relations have a positive effect but that geographical distance has a negative effect on levels of SL. Our results may indicate that where information on borrowers is uncertain and unverifiable Chinese banks will use SL to reduce the information asymmetries that tend to arise from greater geographical distance. In other words, information uncertainty will not deter Chinese banks from entering a market: it will merely change their entry method from direct lending to SL.

This result is further bolstered by our finding that ownership structure – that is, whether a firm is privately or publicly – is negatively

associated with overall SL volume, with a coefficient of -0.456 at a 1% significance level. This suggests that Chinese banks will enter into more SL with public companies in foreign countries – perhaps indicating an element of risk management, as both SL and public ownership will reduce asymmetric information and the bank's exposure to the risk of a borrower defaulting. As the impact of borrower ownership outweighs that of geographical distance, we accept hypothesis 1 – that high levels of information asymmetry between banks and potential borrowers will stimulate the use of SLs. In keeping with Cerutti *et al* (2015), this result allows us to posit that Chinese banks regard overseas SL as a strategic means of increasing certainty in markets where information asymmetry is high. As foreign presence helps reduce information barriers to cross-border loans (Houston *et al*, 2017), we reason that Chinese banks are incentivized to engage in cross-border SL as an effective way to compensate for their limited physical presence in borrower countries, to lower information asymmetries and to diversify their lending portfolios.

We now turn to hypothesis 2. With a coefficient of -1.641 at a 1% significance level, our results show that networks and national clustering affect SL behaviour and that the inclusion of a non-Chinese foreign bank in a syndicate has a significantly negative impact on the volume of SL undertaken. In other words, if a syndicate includes a foreign bank the SL volume tends to be lower; and if a syndicate includes only Chinese banks the loan volume tends to be higher. This leads us to accept hypothesis 2 – that clustering with Chinese banks is associated with higher cross-border SLs extended by Chinese banks. This result is in line with the work of Champagne (2014) and Sufi (2007).

Moving on to credit risk, we accept our hypothesis that Chinese banks with higher levels of *expected* risk, as measured by loan loss provisions, have a significantly positive impact on SL business among Chinese banks (with a coefficient of 0.02 at a 5% significance level). If we

measure credit risk using the level of non-performing loans, however, we find no significant impact on SL behaviour. Loan loss provisions appear on the income statement of a bank and are an indication of *future* losses, whereas non-performing loans appear on the balance sheet of a bank and represent the amount of loans that have actually gone into default. Our result indicates that it is *expected* loan losses, not the actual amount of losses, that may prompt Chinese banks to increase their activity in the SL market – most probably in the hope of managing future levels of credit risk. Although this indicates that the SL market is being used to diversify identified future lending risk, we therefore reject hypothesis 3 when non-performing loans are the proxy for credit risk.

We next turn to the question of size. We find that levels of capital do not have any significant influence on SL behaviour but that bank size, with a coefficient of -0.194, has a significantly negative impact. This provides support for hypothesis 4 – that smaller Chinese banks with capital constraints are more active in cross-border SL. These banks use SL as a strategy to enter new markets where their size would prohibit them from engaging in traditional lending. This finding also underpins our interpretation of hypotheses 1 and 3, as smaller Chinese banks tend to have less physical presence and reputation in borrower countries and higher credit risk levels – attributes that compel them to diversify their lending portfolios by 'free riding' on the information provided by a syndicate's leading bank.

Table 4: Regression and robustness check (full sample)

	(1)	(2)	(3)
VARIABLES	**Full sample**	**Real Interest rate**	**Regulation quality difference**
Foreign banks	-1.641***	-1.686***	-1.654***
	(-9.484)	(-9.887)	(-9.618)

Private company	-0.456***	-0.535***	-0.454***
	(-6.079)	(-7.015)	(-6.048)
Bank ownership	0.00526*	0.00451*	0.00510*
	(1.932)	(1.802)	(1.883)
Bank capital	-0.0390	-0.0606	-0.0388
	(-0.787)	(-1.264)	(-0.779)
Non-performing loans	0.126	0.0929	0.129
	(0.645)	(0.491)	(0.656)
Loan loss provisions	0.0243**	0.0187*	0.0241**
	(2.299)	(1.821)	(2.265)
Bank size	-0.194***	-0.219***	-0.193***
	(-2.862)	(-3.380)	(-2.832)
Trade	0.0270	0.0578*	0.0364
	(0.690)	(1.746)	(0.950)
M2/GDP	0.00112		0.00167
	(1.008)		(1.538)
Difference in rule of law	0.0877	0.0670	
	(1.472)	(1.299)	
Distance	0.0389***	0.0389***	0.0408***
	(4.058)	(4.251)	(4.288)
Real interest rate		-0.0145	
		(-1.473)	
Difference in regulation quality			0.0369
			(0.601)
Constant	21.79***	22.31***	21.56***
	(11.50)	(12.52)	(11.43)
Observations	1,091	1,155	1,091
R-squared	0.213	0.229	0.211
Average VIF	2.73	2.65	2.72
t-statistics in parentheses			
***** p<0.01, ** p<0.05, * p<0.1**			

Our results indicate that ownership has a slight positive impact (0.005 at a 10% significance level), with the percentage of state shares in a bank positively associated with cross-border SL volumes. We therefore accept hypothesis 5 – that the amount of state ownership in a bank is positively associated with the amount of cross-border SL. Higher state ownership indicates a greater willingness to comply with national strategies to develop overseas business and extend cross-border loans, as well as an enhanced capacity to secure funds and allocate financial resources both within and across borders.

Local banking conditions in borrower countries, as measured by M2/GDP, is not significant for Chinese banks when extending cross-border SLs. The difference in rule of law between China and a borrower country is also not significant. We therefore reject hypothesis 6 – that greater institutional proximity between China and a borrowing firm's country are associated with higher cross-border SLs extended by Chinese banks. Importantly, our variance inflation factor test results suggest that the regression has no obvious multicollinearity issue.

The robustness tests for our results are shown in Table 4. The role of grouping with foreign banks and whether the borrower firm is private are insensitive to additional country characteristics. Bank loan loss provisions and ownership survive our test, but the significance of loan loss provisions declines to 10% level after the real interest rates of borrower countries are included to replace M2/GDP. Geographical distance provides stable and significant results, and its coefficient increases after including additional country characteristics. Bank size remains significant after both tests, while its significance level and coefficient actually increase after the inclusion of real interest rates. Trade between China and borrower countries remains insignificant when we include any regulatory differences, but becomes significant at 10% level with a coefficient of 0.058 when we add real interest rates. local banking opportunities and institutional proximity remain insignificant. In the main, then, our results survive the robustness tests,

and we can reject hypothesis 6 while accepting hypotheses 1, 2, 3, 4 and 5.

Chinese banks' SL to developed and developing economies

We next divide borrower countries into two groups – developing economies and developed economies, based on the World Bank classification (see Appendix 2 and 3). We do this because some studies argue that banks within developed economies, which have larger and more developed financial systems, tend to have different motives for entering the SL market than those within developing economies (Haselmann and Wachtel, 2011). Our regression and robustness check results for developing countries are shown in Table 5, while those for developed countries are shown in Table 6.

Table 5: Regression and robustness checks - developing countries

	(1)	(2)	(3)
VARIABLES	**Developing countries**	**Real interest rate**	**Regulation quality difference**
Foreign banks	-1.918***	-2.100***	-1.912***
	(-7.057)	(-7.578)	(-6.953)
Private company	-0.399***	-0.486***	-0.462***
	(-2.763)	(-3.209)	(-3.178)
Bank ownership	0.0189***	0.0172***	0.0200***
	(3.907)	(3.370)	(3.912)
Bank capital	-0.409***	-0.355***	-0.355***
	(-4.381)	(-3.573)	(-3.859)
Non-performing loans	0.484*	0.548*	0.576**
	(1.842)	(1.924)	(2.001)
Loan loss provisions	-0.0353**	-0.0254	-0.0302**
	(-2.351)	(-1.607)	(-1.982)
Bank size	-0.648***	-0.641***	-0.629***
	(-4.351)	(-4.159)	(-4.195)

Trade	0.221***	0.209***	0.139**
	(3.583)	(3.187)	(2.248)
M2/GDP	-0.00151		0.00166
	(-0.600)		(0.591)
Difference in rule of law	0.606*	0.838**	
	(1.862)	(2.409)	
Distance	0.0111	-0.00220	0.0311**
	(0.844)	(-0.146)	(2.472)
Real interest rate		0.0206	
		(1.503)	
Difference in regulation quality			-0.658**
			(-1.984)
Constant	31.02***	30.42***	31.85***
	(8.050)	(7.497)	(7.928)
Observations	284	263	284
R-squared	0.408	0.432	0.409
Average VIF	3.42	3.46	3.47
t-statistics in parentheses			
***** p<0.01, ** p<0.05, * p<0.1**			

Our results show that Chinese banks do have different motives when extending cross-border SLs to developing and developed countries. For developing countries the credit risk level represented by loan loss provisions is not positively associated with SL amounts: it actually plays a negative role, with a coefficient of -0.04 at a 5% significance level, while bank ownership has a significantly positive role at a 1% level. Bank capital and bank size also have a significant and negative impact on SL amounts. Trade plays a significantly positive role, which means that lowering information asymmetry is associated with higher cross-border SLs extended by Chinese banks to developing countries. Difference in rule of law becomes significantly positive, with a coefficient of 0.61 at a 10% level. It suggests lower institutional

proximity between China and a borrowing firm's country is associated with higher cross-border SLs.

Table 6: Regression and robustness checks - developed countries

	(1)	(2)	(3)
VARIABLES	**Developed countries**	**Real interest rate**	**Regulation quality difference**
Foreign banks	-1.687***	-1.527***	-1.670***
	(-8.602)	(-8.416)	(-8.591)
Private company	-0.368***	-0.455***	-0.373***
	(-4.146)	(-5.380)	(-4.210)
Bank ownership	-0.000723	0.000766	-0.000522
	(-0.217)	(0.274)	(-0.157)
Bank capital	0.0226	-0.0229	0.0230
	(0.424)	(-0.462)	(0.436)
Non-performing loans	0.298	0.196	0.312
	(1.163)	(0.820)	(1.222)
Loan loss provisions	0.0305**	0.0223*	0.0301**
	(2.392)	(1.914)	(2.369)
Bank size	-0.159**	-0.212***	-0.162**
	(-1.993)	(-2.883)	(-2.018)
Trade	-0.112**	-0.0213	-0.112**
	(-2.026)	(-0.514)	(-1.986)
M2/GDP	0.00197		0.00187
	(1.628)		(1.549)
Difference in rule of law	-0.0534	-0.227	
	(-0.292)	(-1.610)	
Distance	0.0936***	0.0521***	0.0947***
	(6.047)	(3.554)	(5.924)
Real interest rate		-0.0448***	
		(-2.585)	
Difference in			0.0384

regulation quality			
			(0.287)
Constant	23.87***	24.33***	23.69***
	(9.991)	(12.08)	(9.813)
Observations	807	892	807
R-squared	0.188	0.212	0.188
Average VIF	2.88	2.83	2.89
t-statistics in parentheses			
***** p<0.01, ** p<0.05, * p<0.1**			

Hypotheses 1, 2, 4 and 5 are therefore accepted with regard to SLs for developing countries, while hypotheses 3 and 6 are rejected. Only hypothesis 6 was rejected in relation to our full sample. Important here is the role played by credit risk when entering developed versus developing country markets; so, too, is the increased significance of bank ownership. This helps establish our assertion that Chinese banks will tend to follow national strategies when extending SLs to developing countries and that those banks that manage their credit risk in a more efficient way tend to extend more loans into such markets.

When Chinese banks extend SLs to developed countries, by contrast, trade has a significantly negative coefficient and geographical distance has a positive impact – indicating that greater information asymmetry triggers higher SLs from Chinese banks. However, the combined coefficient absolute values of the two variables (0.21) is lower than that for the private company SL market (-0.37), which is negatively associated with the SL loan amount at a 1% significance level. For this sub-sample, then, we accept hypothesis 1. We also accept hypothesis 2, as we still find that Chinese banks' clustering with foreign banks has a negative effect on SL levels.

As the difference in rule of law remains insignificant, we reject hypothesis 6, which assumes a significant link between institutional proximity and SL volumes. Bank characteristics such as state ownership and capital level are not significant for developed borrower countries, while total assets remains significantly negative, with less impact (-0.16) at a lower significance level (5%). The expected credit risk level of banks – indexed by loan loss provisions – becomes significantly positive. We therefore accept hypothesis 3 and 4 and reject hypotheses 5 for this sub-sample.

The above results indicate that Chinese banks demonstrate different motivations when extending SLs to developed and developing countries. Higher expected credit risk levels lead to more cross-border SLs to developed countries, while SL lending to developing countries is driven by state ownership and scale. This concurs with the existing literature, which finds that foreign banks have various motives when extending SLs to these two types of economies (Haselmann and Wachtel, 2011).

Our final test is to include negative signs of the difference in rule of law and regulation quality. Instead of using absolute values for both variables, we allow the values to be negative when the borrower country has a lower score than China in terms of rule of law and regulation. As shown in Table 7, our results survive this test.

Table 7: Regression and robustness check results after including direction of two variables

	(1)	(2)	(3)
VARIABLES	**Full sample**	**Real interest rate**	**Regulation quality difference**
Foreign banks	-1.641***	-1.685***	-1.652***
	(-9.484)	(-9.869)	(-9.615)
Private company	-0.456***	-0.532***	-0.455***
	(-6.079)	(-7.006)	(-6.057)

Bank ownership	0.00526*	0.00452*	0.00520*
	(1.932)	(1.807)	(1.918)
Bank capital	-0.0390	-0.0607	-0.0385
	(-0.787)	(-1.268)	(-0.776)
Non-performing loans	0.126	0.0917	0.126
	(0.645)	(0.484)	(0.646)
Loan loss provisions	0.0243**	0.0186*	0.0241**
	(2.299)	(1.807)	(2.273)
Bank size	-0.194***	-0.218***	-0.191***
	(-2.862)	(-3.360)	(-2.804)
Trade	0.0270	0.0572*	0.0310
	(0.690)	(1.707)	(0.799)
M2/GDP	0.00112		0.00141
	(1.008)		(1.294)
Difference in rule of law	0.0877		
	(1.472)		
Distance	0.0389***	0.0394***	0.0409***
	(4.058)	(4.313)	(4.288)
Difference in rule of law 2		0.0527	
		(1.124)	
Real interest rate		-0.0153	
		(-1.580)	
Difference in regulation quality 2			0.0549
			(0.989)
Constant	21.79***	22.33***	21.65***
	(11.50)	(12.50)	(11.44)
Observations	1,091	1,155	1,091
R-squared	0.213	0.229	0.212
Average VIF	2.73	2.65	2.73
t-statistics in parentheses			
***** p<0.01, ** p<0.05, * p<0.1**			

6. Conclusions

Our analysis provides us with several interesting insights into the cross-border SL market and the characteristics of the Chinese banks that operate within it. In contrast to other research, our study finds that trade relations are not significant but in line with previous studies, that geographical distance is – indicating that Chinese banks are more active in the SL market when a borrower country is farther from China. Accordingly, it may be that Chinese banks are using SL to gain access to countries where traditional lending, mainly due to a lack of knowledge in these markets and heightened asymmetric information, would be too risky. Uncertainty of operation in these markets is not deterring entry by Chinese banks: rather, it is changing their mode of entry from direct lending to SL.

As might be expected in light of the results of research into other banking sectors, Chinese banks reduce asymmetric information and increase certainty of outcome by undertaking more SL involving publicly listed companies in foreign countries. This leads us to conclude that Chinese bank activity in the overseas SL market constitutes a planned strategic solution to manage risk. Also of interest is our finding that Chinese banks do not like to partner with foreign banks located outside China, preferring instead to undertake SL with Chinese bank partners that have most likely built up relationships in borrower countries. In addition, Chinese banks appear to use SL as a form of protection from default risk – itself a way of managing asymmetric information.

This is further underlined by arguably our most interesting finding, which is that SL business is stimulated not by non-performing loans (NPL) but by levels of loan loss provision (LLP). We find that NPL is not a significant indicator of Chinese bank operations in the SL market but that LLP levels are, indicating that expected loan losses may act as a trigger for banks to increase their activity in the SL market. This may represent an attempt to manage future levels of credit risk.

We also find that bank size is a factor. Smaller Chinese banks undertake more SL business, using SL as a strategy to enter new markets where their size would prohibit them from entry via the traditional lending market. This may also constitute an attempt to manage credit risk through diversification, given that smaller banks are likely to lack a physical presence or build a reputation in borrower countries and might therefore be minded to 'free ride' within a syndicate.

Finally, we find that a greater share of state ownership of a Chinese bank increases cross-border SL lending volumes. This may be a consequence of government strategies to develop overseas business and extend cross-border loans; it may also be the case that this type of business is being funded both within and across borders.

Our findings have important implications for banking regulators and policymakers witnessing outbound Chinese capital flows for financing overseas companies and projects. They suggest that SLs from China to developing countries might be relatively steady, as such lending is more closely associated with government intention and bilateral relationships, while similar lending to developed markets could be more affected by expected credit risk levels among Chinese banks themselves. The positive association between banks' credit risk and their willingness to extend overseas SLs highlights potential fluctuation and uncertainties in the global financial market when Chinese banks adjust their risk measurement to comply with the newest Basel regulatory rules and when the solvency of Chinese firms deteriorates against a backdrop of unclear economic prospects.

We expect future studies to analyze a wider range of evidence, explore further the relationships between credit risk and cross-border SL exposures, and to provide more potentially valuable insights into China's overseas lending activities, their characteristics and their possible impacts on the global economy.

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Appendix 1: Pearson's correlation between variables

	Loan amount	Foreign banks	Private company	Bank ownership	Bank capital	NPL	LLP	Bank size	Trade	M2/GDP	Rule of law difference	Distance	Real interest rate
Foreign banks	-0.3687***	1											
Private company	-0.2416***	0.0471*	1										
Bank ownership	0.1147***	-0.1911***	-0.0071	1									
Bank capital	-0.0857***	0.1392***	0.0574**	-0.2143***	1								
NPL	-0.0351	0.0941***	0.0178	-0.0288	-0.2499***	1							
LLP	0.1210***	-0.1458***	-0.0214	0.4744***	-0.4599***	0.1234***	1						
Bank size	-0.0356	0.0651**	-0.0303	0.0794***	-0.6617***	0.4254***	-0.0891***	1					
Trade	-0.0043	0.1853***	-0.0869***	-0.1365***	0.0165	0.0406	-0.1826***	0.1590***	1				
M2/GDP	-0.0118	0.1208***	-0.0221	-0.0821***	0.0812***	0.0188	-0.1084***	0.1071***	0.2808***	1			
Rule of law difference	0.0206	0.0670**	-0.0013	-0.1394***	0.0529*	0.0290	-0.1427***	0.1445***	0.3531***	0.6054***	1		
Distance	0.1460****	-0.0334	-0.1018***	-0.0301	-0.0119	-0.0743***	0.0101	0.0737***	0.0744***	-0.2486***	0.0393	1	
Real interest rate	-0.0701*	-0.0070	0.2071***	0.1160***	-0.0902***	0.1020***	0.0991***	-0.0420	-0.1452***	-0.2624***	-0.2821***	0.0561*	1
Regulation difference	-0.0040	0.0843***	0.0070	-0.1322***	0.0326	0.0101	-0.1242***	0.1526***	0.3014***	0.5954***	0.9431***	-0.0416	-0.2386***
***** p<0.01, ** p<0.05, * p<0.1**													

Appendix 2: List of developing countries

Domicile	Freq.	Percent
Angola	2	0.62
Argentina	17	5.31
Bahamas	2	0.62
Botswana	3	0.94
Brazil	33	10.31
Burundi	2	0.62
Cambodia	3	0.94
Cape Verde	4	1.25
Colombia	1	0.31
Egypt	4	1.25
Ghana	2	0.62
India	25	7.81
Indonesia	60	18.75
Kazakhstan	9	2.81
Kenya	2	0.62
Laos	2	0.62
Liberia	2	0.62
Malaysia	6	1.88
Mauritius	2	0.62
Mexico	1	0.31
Mongolia	3	0.94
Nigeria	12	3.75
Pakistan	2	0.62
Panama	7	2.19
Papua New Guinea	2	0.62
Peru	3	0.94
Philippines	4	1.25
Russia	23	7.19
South Africa	32	10
Tanzania	1	0.31
Thailand	24	7.5
Turkey	6	1.88
Turkmenistan	1	0.31

Ukraine	1	0.31
Uzbekistan	1	0.31
Venezuela	1	0.31
Vietnam	15	4.69
Total	320	100

Appendix 3: List of developed countries

Domicile	Freq.	Percent
Australia	224	23.73
Belgium	4	0.42
Canada	15	1.59
Chile	1	0.11
Czech Republic	12	1.27
Denmark	2	0.21
Finland	3	0.32
France	44	4.66
Germany	37	3.92
Greece	6	0.64
Hungary	2	0.21
Ireland	4	0.42
Italy	11	1.17
Japan	18	1.91
Kuwait	1	0.11
Luxembourg	8	0.85
Netherlands	31	3.28
New Zealand	13	1.38
Norway	2	0.21
Oman	8	0.85
Portugal	7	0.74
Qatar	7	0.74
Saudi Arabia	2	0.21
Singapore	133	14.09
South Korea	34	3.6
Spain	2	0.21

Sweden	13	1.38
Switzerland	13	1.38
United Arab Emirates	7	0.74
United Kingdom	82	8.69
United States	198	20.97
Total	944	100

II. Chapter 2

Foreign Syndicated Loans: Good News or Bad News for Firms Listed in Emerging Economies?

1. Introduction

Syndicated loans refers to lending which is jointly extended by multiple banks to one borrower where the syndicate develops around the arrangers; these often comprise the borrower's relationship banks (Gadanecz, 2004). According to data from the Bank for International Settlements, syndicated credits have become a key source of cross-border financing, as the international syndicated lending market takes up around one third of total international financing, including bonds, commercial papers and equity issues (Gadanecz, 2004). Such lending has become a main arena where lenders expand their activities into global markets and internationalize their business. Furthermore, differing from most financial products, firms of various credit spectrum, no matter whether they are privately held, or rated, with high yield or not, all use this form of finance (Sufi, 2007). The existing literature neglects, however, the significance of syndicated loans in cross-border

capital flows and their effects on the stock performance of borrowers, particularly those from emerging economies where bank loans play a prominent role in total financing compared with developed countries. Developing countries seem able to borrow more freely from banks than bond markets (Allen, 1990) as banks in these countries play an important informational role by monitoring borrowers; firms also first count on bank finance before graduating to bond and equity finance as credit worthiness information becomes more complete, according to the "pecking order theories" (Eichengreen & Mody, 2000).

In addition, syndicated loans has become a major financial resource for developing countries to fund different large-scaled projects and for firms in emerging markets to gain access to foreign capital. Relatively few infrastructure projects in emerging markets have been financed through securities markets as SLs provide both delegated monitoring and portfolio diversification services (Eichengreen & Mody, 2000). Also, a significant gap in auditing, accounting and disclosure standards with developed countries is attributable to the important role of banks in emerging markets (Eichengreen & Mody, 2000). Our research aims to fill in this gap, examine whether and how receiving syndicated loans affect a firm's market-based performance, and analyse syndicated loans lent to publicly listed firms in 15 MSCI developing countries by foreign banks over the period 1998 to 2016. Among the 24 countries or regions included in the MSCI Emerging Markets Index[6], we deduct the nine high income countries[7] defined by the World Bank.

The research question of what effect receiving cross-border syndicated loans has on a firm's performance is the focus in this chapter. This question is particularly pertinent if we consider that syndicated loans

[6] The MSCI Emerging Markets Index covers approximately 85% of market capitalization in each of the 24 emerging markets, which include Brazil, Chile, Chinese mainland, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, South Korea, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Russia, Qatar, South Africa, Taiwan, Thailand, Turkey and United Arab Emirates.

7 The high-income markets that we excluded from our samples are Chile, Czech Republic, Greece, Hungary, South Korea, Poland, Qatar, Taiwan, and United Arab Emirates.

are developed around arrangers that are appointed by the borrowers themselves. Borrowers could enjoy some potential benefits by initiating syndicated loans: Allen (1990) and Altunbas and Gadanecz (2004) suggest that SLs are less costly than bond issuance in terms of origination fees, and better than bilateral loan agreements in terms of spread. In addition, SLs could be arranged more quickly and more discreetly than bonds (Godlewski and Weill, 2008). Whether organizing and receiving such loans can be beneficial to firms' performance in financial markets matters to future decisions of both firms and policy makers, and deserves academic attention and investigation. The answers to whether obtaining such loans could benefit firms' performance remain uncertain, which has left space for further research. This chapter, hopefully, fills the gap from these aspects and contributes to the existing literature on the relation between syndicated loans and firm performance, as well as emerging market studies.

The remainder of this chapter is organized as following: in Section 2 we will review the existent literature and develop research hypotheses; in Section 3 we will introduce the data we collected and the research methodology; while in Sections 4 and 5 we will go through the summary statistics and empirical results; we will draw some conclusions in Section 6.

2. Literature review and hypotheses development

2.1 Literature Review on Foreign SLs in Emerging Economies

This chapter, hopefully, contributes to the existing literature on syndicated lending from two aspects. First, it provides new evidence on market evaluation following cross-border SL announcements. Second, it investigates how capital markets respond to overseas SLs lent by

foreign banks to firms in developing countries and contributes to studies on development finance.

There are several studies on relationship lending and disintermediated debt characteristics of syndicated loans (Dennis & Mullineaux, 2000; Gadanecz, 2004); however, very few focus on the impact of SLs on firms' market performance, let alone that of cross-border SLs. This chapter, hopefully, contributes to the studies concerning the influence of syndicated loans on firms.

Ongena and Roscovan (2013), conducting an event study on the impact of banks' geographical origin on investors' assessments of borrowers' stock returns in the US over the period of 1980-2003, find investors react positively to the loan announcement if the loans are extended by foreign or local banks, but not if they are made by banks located outside the borrower's headquarter state. Furthermore, market investors react positively to the largest scale when the bank is foreign compared with local, which suggests investors appreciate more competitive and skilled banks instead of those with easier access to firms' private information. Armitage (1995) analyses syndicated loan announcements for quoted UK companies to observe whether banks obtain inside information about borrowers, using event study methodology. The results indicate minimum stock market response to loan announcements in the UK, which could not support the assumption that banks obtain inside information about their borrowers.

Gasbarro et al. (2004) confirm that SL announcements from both the financial press and commercial information providers can affect firms' share price reaction; they also find that SL announcements increase borrowers' shareholder wealth if they are revolving credit agreements but not if they are term loans, proving the market valuates greater flexibility for borrowers to decide when and how much they would like to borrow.

A main feature of some emerging markets is the strong role of government. The markets may negatively react to loans extended by lenders operating with government interference, as this prevents banks from following market criteria when allocating their assets (Gan et al., 2014). Conversely, when banks operate in a system not controlled by the government, loan announcements tend to generate positive abnormal returns for firms' stock as banks could allocate their funds efficiently in this scenario (Boscaljon and Ho, 2005; Aintablian and Roberts, 2000; Billett et al., 1995). An example of emerging economies with strong government interference is the Chinese mainland. Shen et al. (2007), studying market response to bank loan announcements in the Chinese financial market in 2005, finds a significant negative reaction, using a much longer event window (30 days) as the market is not as efficient as others and, thus, market response is relatively slow. Several similar studies, however, draw very different conclusions. For instance, Chen and Tsai (2006), investigating market response in Taiwan, generate positive abnormal returns. Ongena and Roscovan (2013) find investors react positively to the loan announcement by analysing evidence from the US, and Armitage (1995) analyses SL announcements for quoted UK companies and finds little response.

Very few of these studies on market response to bank loan announcements in developing countries focus specifically on SLs, particularly cross-border SLs. SLs have very different characteristics from bilateral loan deals and deserve special academic attention concerning this type of lending. In a syndicated loan, multiple banks jointly extend lending to a borrower. The syndicate is developed around the arrangers, often the borrower's relationship banks, and they will look for junior participants (Gadanecz, 2004). Affiliated with some characteristics similar to relationship banking, SLs are expected to be a reasonable solution to overcome the adverse selection and moral hazard problems when lenders do not have enough information about

the borrowers. In terms of cross-border lending, information asymmetry is especially highlighted due to greater economic, cultural and geographical distance between the lenders and borrowers. The reputation of banks could play a role in reducing information asymmetry. For instance, Sufi (2007) finds evidence that lead bank and borrower reputation reduce but do not eliminate information asymmetry problems. Compared with their domestic counterparts, foreign banks have a better reputation for making business-oriented decisions and high efficiency, and we could expect the market response to cross-border syndicated loans from foreign lenders to be positive, as it indicates that such banks have inspected the creditworthiness and financial soundness of the borrowing firms in emerging markets. Nevertheless, such a positive association might be weaker for loans extended after a financial crisis, as several leading foreign banks were much more affected by the global financial crisis than their counterparts in developing countries.

2.2 Hypothesis Development

A string of literature suggests the impact of foreign SL announcement is not consistent across different markets and whether it would be positive or negative depends on factors from various dimensions – not only firm, bank and deal characteristics but, also, institutional, legal, economic and cultural differences.

Hypothesis 1: *Borrowing firm characteristics affect abnormal stock returns around foreign SL announcements*

The characteristics of borrowers are expected to play a significant role on the outcome of receiving SLs in capital markets. Such firm-level characteristics could include firm size, profitability, leverage, liability, tangibility, market to book value, and EBITDA (Bosch & Steffen, 2011; Godlewski, 2010; Lee et al., 2010; Pessarossi et al., 2012). Firm size, profitability, tangibility and EBTDA are expected to have a positive

impact on market response to SL announcements as they suggest company strength, growth potential and sound liquidation value; meanwhile, leverage and liability might play a negative role as they tend to suggest higher probability of financial distress.

Hypothesis 2: *Lending bank characteristics affect abnormal stock returns around foreign SL announcements*

Lender characteristics are often included in syndication-related studies. Such variables could include bank size, capital adequacy, non-performing loans, loan-loss provisions and bank profitability. We expect bank size, capital adequacy and profitability would be positively associated with market response to cross-border SL announcements, as lenders of greater strength and resilience suggests the borrower has a sound relation with strong overseas lenders and a more diversified funding source. Furthermore, as Ongena and Roscovan (2013) point out, investors appreciate more competitive and skilled banks. Bad loan level and loan loss provisions, on the contrary, are expected to be negatively linked as they indicate less favourable conditions for the banks and, thus, an unstable funding source for borrowers.

Hypothesis 3: *Differences in economic, legal and institutional settings between the borrowing firm's country and lending bank's countries affect abnormal stock returns around foreign SL announcements*

Investors in stock markets of emerging economies might welcome a cross border SL announcement involving a lead bank from a more developed economy as they appreciate more skilled banks (Ongena and Roscovan, 2013). Additionally, markets may negatively react to loans extended by lenders operating with government interference (Gan et al., 2014), which is a main characteristic of a less developed economy. Meanwhile, in cases where banks operate in systems less controlled by the authorities, loan announcements tend to generate positive

abnormal returns for the firms' stock (Boscaljon and Ho, 2005; Aintablian and Roberts, 2000; Billett et al., 1995). We, thus, expect the economic strength of lender countries, such as GDP per capita, and institutional proximity, such as rule of law and political stability, would pose a positive impact on investor response to cross-border SL announcements.

Hypothesis 4: *Deal characteristics affect abnormal stock returns around foreign SL announcements*

Different types of loans might generate different influences on the borrower's market response due to different influences on renegotiation flexibility. Gasbarro et al. (2004) find that SL announcements increase borrowers' shareholder wealth if they are revolving credit agreements but not if they are term loans. They argue that revolving credit agreements provide more flexibility to borrowers, which would reflect on market value flexibility. Also, loan announcements might trigger a different market response for loans with different maturity. Bailey et al. (2011) indicate that the negative association of a bank loan announcement is particularly significant for loans with shorter maturity, given firms borrow short-term loans to fund some long-term assets. Gan et al. (2014) suggest that short-term loans with the involvement of foreign banks indicate the banks' monitoring power tends to increase along with more frequent renewals, thus there might be a stronger impact for short-term loan announcements.

3. Data and Methodology

The main data source of cross-border SL transactions is the Thomson Reuters One Banker database. After cleaning up the data we have

10,275 announced recorded deals that contain at least one cross-border lender between 1998 and 2016, among 20,725 recorded SL transactions in total. The number of borrowers headquartered in 15 emerging markets stands at 3,624, including both private and public firms. Among these borrowers, 2,969 firms are public listed companies. We code listed firms using Thomson One Banker and merge samples of overseas syndicated loan deals directly with stock trading data and company financials from Datastream. Data on trading exchange indices of each country[8] also come from Datastream. After matching the announcement dates with stock trade dates the number of cross-border SL transactions reduces to 2,244 for 13 countries for the period between February 13, 1998 to December 30, 2016. The numbers of observations dropped after merging with the stock market database due to several reasons: some firms that received the loans went to their IPO after the announcement dates; and, some announcement dates occur on holidays; thus, trading date adjustment needs to be applied for the stock market data to contain as many loan observations as possible.

An event study is conducted to monitor the impact of receiving overseas syndicated loans on borrowers' share price fluctuation around announcement dates of syndication agreements. The standardized residual model, developed by Patell (1976) and Brown and Warner (1985), is used to accommodate heteroscedasticity in the event window residuals and prevent some large sample variances from interfering with the results (Seiler, 2000). We follow Gasbarro et al. (2004) to set an estimation period of 255 days, which ends 46 days before the loan announcement date. We take possible information leakage into account

[8] These stock price indices are Shanghai Stock Exchange A Share Price Index, S&P/BVL Peru General Index, Karachi Stock Exchange 100 Index, Egypt Hermes Financial Index, Colombia IGBC Index, Philippine Stock Exchange PSEi Index, South Africa FTSE/JSE All Shares Index, FTSE Bursa Malaysia KLCI Index, Mexico IPC (Bolsa) Index, Bangkok SET Index, Brazil BOVESPA index, Russia RTS Index, Nifty 500 Index, BIST National 100 Index, and IDX Composite Index.

and examine (0,0), 3 day (-1, +1), 5 day (-2,+2), and 11 day (-5,+5) event windows and average the daily returns for all the firms to obtain the average abnormal daily returns. As emerging markets are not as sufficient as the US financial markets and market reaction to information is slower (Shen et al., 2007; Gan et al., 2014), we use wider event windows (-5,+5) for our study. Summing average abnormal returns for all the event windows, altogether, we obtain the cumulative average abnormal returns (CAARs). After splitting each transaction into multiple observations by the number of mandated arrangers, we regress the cumulative abnormal returns to various firm, bank, country, and transaction characteristics in a multivariate setting:

$$CAR(t_1, t_2) = \alpha + \beta X_i + u_i$$

where X_i is a matrix of firm, bank, country, and transaction bank specific characteristics, t_1 and t_2 define the event window during which the abnormal returns are aggregated. As firms could receive multiple loans during the same period, we do not assume the independence of error term for different observations.

Dependent Variables

The chapter aims to analyse the impact of cross-border SLs on firms from the aspect of stock market response, with cumulative abnormal returns to borrower firms' stocks included as dependent variables. The data are calculated based on four event windows separately.

Independent Variables

a. Firm-level variables

We follow (Pessarossi et al., 2012) and include the firm-level characteristics of firm total assets, ROA (profit after tax to total assets), leverage (total debt to total assets), short term debt (short-term debt to total debt), tangibility (net fixed assets to total assets), market to book

value (market value of assets to book value of assets) and EBITDA (earnings before interest, taxes, depreciation and amortization divided by total assets). The data are taken from Datastream (Table 1).

b. Bank-level variables

For bank-level variables we include characteristics of the mandated arrangers for each deal. In line with previous studies, such variables include: bank size (natural logarithm of total bank assets), bank capital (ratio of core capital to total assets), bank nonperforming loans (ratio of bank non-performing loans to total loans), bank loan-loss provisions (ratio of bank loan-loss provisions to total loans), bank loan net charge-offs (ratio of bank net loan charge-offs to total loans), bank profitability (return on average equity). The data are collected from FitchConnect (Table 1).

Table 1: Variable definitions and sources

Variable Name	Definition	Source
Dependent variable		
CAR	Cumulative abnormal return of firms' stock return for different event windows	DataStream
Firm-level independent variables		
Firm size	Natural logarithm of total firm assets	DataStream
ROA	Profit after tax to total assets	DataStream
Leverage	Total debt to total assets	DataStream
Short-term debt	Short-term debt to total debt	DataStream
Tangibility	Net fixed assets to total assets	DataStream
EBITDA	Earnings before interest, taxes, depreciation and amortization divided by total assets	DataStream
Bank-level independent variables		
Bank size	Natural logarithm of total bank assets	FitchConnect
Bank capital	Ratio of core capital defined by Basel Committee against total assets	FitchConnect

Non-performing loans	Ratio of bank non-performing loans to total loans	FitchConnect
Loan loss provisions	Ratio of bank loan-loss provisions to total loans	FitchConnect
Bank profitability	Return on average equity (net income divided by average equity)	FitchConnect
Country-level independent variables		
GDP per capita	GDP per capita of bank country	World Bank
Rule of law	Rule of law of bank country	World Bank
Political stability	Political stability of bank country	World Bank
Deal-level independent variables		
Length of maturity	Length between announcement date and maturity date, calculated by days	Thomson One Banker
Loan amount	Natural logarithm of Loan amount in US dollars	Thomson One Banker
Islamic finance	Dummy variable that equals to 1 if the syndicated loan is Islamic finance	Thomson One Banker
Leveraged	Dummy variable that equals to 1 if the syndicated loan is leveraged	Thomson One Banker
Term loan	Dummy variable that equals to 1 if the syndicated loan is a term loan	Thomson One Banker
Revolving credit	Dummy variable that equals to 1 if the syndicated loan is a revolving credit	Thomson One Banker
No. of mandated arrangers	Number of mandated arrangers for a syndicated loan transaction	Thomson One Banker
Robustness check variable		
Crisis	Dummy variable that equals to 1 if the loan announcement date is in or after the year of 2007	

c. Country-level variables

To control for the impact of country characteristics, we include GDP per capita (GDP per capita of bank country) and institutional proximity (rule of law and political stability of bank country). The data of GDP are taken from the World Bank statistics. Concerning institutional

proximity, we select two of six Worldwide Governance Indicators compiled by the World Bank. The Worldwide Governance Indicators programme provides a consistent and widely accepted measure of governance among different countries by capturing six key dimensions: voice and accountability; political stability and lack of violence; government effectiveness; regulatory quality; rule of law; and control of corruption. The measure of rule of law reflects, particular, the quality of contract enforcement and we believe this and political stability are more relevant to cross-border loan deals than other indicators, thereby avoiding issues with multicollinearity (Table 1).

d. Deal-level variables

For each deal, the syndicated loan amount in million US dollars, the dummy variable of whether the lending is leveraged, number of bookrunners, and number of mandated arrangers, length of loan maturity, initial pricing, and whether a loan is term loan or revolving credit are included. The data are taken from the Thomson One Banker database (Table 1). The loan amount is adjusted by inflation rate.

As for robustness check, we test the sensitivity of the results to alternative event windows that exclude information leakage and different time periods, such as before and after the global financial crisis.

4. Summary Statistics

Our merged sample includes 2,244 cross border SL announcements. As multiple banks could be involved in one observation we follow the approach of Cerutti et al. (2015), Giannetti and Laeven (2012) and Hale (2012) and divide loan volumes equally across syndicate participants to calculate each bank's loan exposure from non-zero cross-border SL deals. Thus, we obtain 13,074 observations with one single bank included for each transaction. The summary statistics for loan characteristics are listed in Table 2. As shown in Table 2 and Appendix

1-6, among cross-border SLs, 79% are term loans and 7.5% are revolving credit. On average each loan has a lending package of $85.4 million, maturity length of 1151 days, and nearly 14 participants.

Table 2: Summary statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
CAR (-1,1)	13,074	-0.0005825	0.0347795	-0.2833242	0.2695202
Panel A: Loan-level independent variables					
Maturity length	12,301	1151.023	924.871	90	7305
Loan amount	13,068	85.40137	213.0429	1.267	6250
Short term loan	13,074	0.000153	0.0123678	0	1
Leveraged	13,074	0.3081689	0.4617544	0	1
Term loan	13,074	0.7936362	0.4047101	0	1
Revolving credit	13,074	0.0745755	0.2627152	0	1
Islamic finance	13,074	0.009102	0.094973	0	1
No. of tier 1 agents	13,074	13.55981	8.913524	1	49
Panel B: Firm-level independent variables					
ROA	5,572	134.2674	1027.678	-377.1984	13940.2
Firm Size	5,719	7.02e+09	3.81e+10	44079.74	5.84e+11
Leverage	5,629	32.94959	25.27172	0	325.28
Short-term debt ratio	5,610	0.4114423	0.3034057	0	1
Tangibility	5,673	4.888373	18.07986	-8.853071	221.8914
EBITDA	5,546	6.31e+08	3.13e+09	-2.19e+10	3.56e+10
Panel C: Bank-level independent variables					
Bank size	5,586	1031574	833648.2	6.598313	3155430
Bank capital	4,883	11.31741	6.816699	-3.7	340.52
Non-performing loans	5,308	2.989322	2.540106	0	26.49
Loan loss provisions	5,169	0.7578468	0.9797078	-2.63	11.76
Bank profitability	5,362	9.586953	11.87128	-194.76	84.31
Panel D: Country-level independent variables					
GDP per capita	2,544	28717.99	13789.75	-10394.8	121662.5
Rule of law	2,481	1.595854	0.4862382	-0.8945234	2.689628
Political stability	2,481	1.441236	0.6584082	-1.416213	3.006556

5. Results

5.1 Univariate results

The results in Table 3 suggest that for event windows that include the information leakage possibility, that is, (0.0), (-1, +1), (-2, +2), (-5, +5), receiving SLs that involve at least one foreign bank participant tend to trigger negative market response and reduce the stock return of the borrower. Such a negative association grows stronger when the event window is longer, as the absolute value of the coefficient increases from 0.0017 for (-1, +1) to 0.0234 for (-5, +5). However, the significance level goes down from 5% to 10%.

Table 3: Cumulative loan announcement abnormal returns for cross-border syndicated loans

		Event Window (0,0)		**Event Window (-1,+1)**		**Event Window (-2,+2)**		**Event Window (-5,+5)**	
Type of Announ-cement	No. of Obs.	CAAR (%)	t-statistic	CAAR (%)	t-statistic	CAAR (%)	t-statistic	CAAR (%)	t-statistic
Cross border SLs	2244	0.12**	-2.44	-0.17**	-2.07	-0.16*	-1.71	-2.34*	-1.81

Table 4 shows the results for event windows that exclude the information leakage possibility. Cross-border SLs have a significantly negative impact on stock return for event windows (0, 0), (0, +1) and (0, +5). Also, the negative impact increases with time as the absolute value of the coefficient rises from 0.0012 for (0,0) to 0.0014 for (0,+1), before reaching 0.0024 for (0, +5). Meanwhile the significance remains at the 5% level. The results suggest the negative market response of investors, following cross-border SL announcements, persists no matter whether we consider possibility of information leakage.

Table 4: Cumulative loan announcement abnormal returns for event windows excluding information leakage

		Event Window (0,0)		Event Window (0,+1)		Event Window (0,+2)		Event Window (0,+5)	
Type of Announcement	No. of Obs.	CAAR (%)	t-statistic	CAAR (%)	t-statistic	CAAR (%)	t-statistic	CAAR (%)	t-statistic
Cross border SLs	2244	-0.12**	-2.44	-0.14**	-1.97	-0.07	-0.91	-0.24**	-2.36

Table 5 shows the univariate analysis based on firm-level variables. Firm size does not seem to pose any significant impact across the time windows of (-5,-2), (-1,+1) and (+2, +5), while firm leverage makes a difference of -0.0027 for window (-1,+1) – high leverage is associated with a negative CAR as expected. For the same window high level of short-term debt has 0.0024 lower CAR, but for window (+2,+5) high short-term debt suggests 0.0027 higher CAR, reflecting investors' different attitudes during and after the event. The CAR difference for firm tangibility is not significant for window (-1,+1), but significant for (+2,+5), indicating higher tangibility is linked with 0.0017 lower CAR. As for EBITDA, a significant difference is observed for window (+2,+5), which proves higher profitability of a borrower leads to positive reaction of the market.

Table 5: Univariate Analysis – Firm-level Variables

	N	CAR (-5,-2)	CAR (-1,+1)	CAR (+2,+5)
Firm size - HIGH	1,316	0.0017	0.0000	-0.0017
Firm size - LOW	8,422	0.0013	0.0001	-0.0010
Difference	7,106	0.0004	-0.0001	-0.0007
t-test		0.4540	-0.0881	-0.8093
Firm leverage - HIGH	3,939	0.0010	-0.0016	-0.0007
Firm leverage - LOW	5,799	0.0016	0.0012	-0.0013
Difference	1860	-0.0007	-0.0027	0.0007
t-test		-1.0851	-3.9235***	1.0438
Firm short-term debt - HIGH	4,522	0.0010	-0.0012	0.0004
Firm short-term debt - LOW	5,216	0.0017	0.0012	-0.0023
Difference	694	-0.0007	-0.0024	0.0027
t-test		-1.1422	-3.5310***	4.3820***

Firm tangibility – HIGH	1,682	0.0003	0.0007	-0.0025
Firm tangibility - LOW	8,056	0.0015	-0.0001	-0.0008
Difference	6,374	-0.0013	0.0007	-0.0017
t-test		-1.5343	0.8221	-2.0820**
Firm EBITDA – HIGH	1,568	0.0021	0.0015	0.0022
Firm EBITDA – LOW	8,170	0.0012	-0.0002	-0.0017
Difference	6,602	0.0009	0.0017	0.0039
t-test		1.0164	1.8675*	4.7046***

Table 6 shows CAR differences between higher and lower than average groups based on bank-level variables. Difference related to bank size is not statistically significant, while higher capital level of the mandated arranger is associated with 0.0012 lower CAR for the event window (-1,+1). Higher bad loan level is positively linked to CAR for the same window, with a difference of 0.0018 compared with banks with lower non-performing loans. Higher loan loss provision is linked to higher CAR for both (-1,+1) and (+2, +5). Bank profitability, however, shows significant differences in CAR for window (-5,-2) and (-1, +1), and is positively associated with CAR. And the difference increases from 0.0017 to 0.0034 when it's getting closer to the event.

Table 6: Univariate Analysis – Bank-level Variables

	N	**CAR (-5,-2)**	**CAR (-1,+1)**	**CAR (+2,+5)**
Bank size – HIGH	4,880	0.0015	-0.0002	-0.0014
Bank size - LOW	4,858	0.0011	0.0003	-0.0007
Difference	22	0.0004	-0.0005	-0.0008
t-test		0.6744	-0.7812	-1.2248
Bank capital – HIGH	6,109	0.0011	-0.0004	-0.0009
Bank capital - LOW	3,629	0.0018	0.0008	-0.0014
Difference	2,480	-0.0007	-0.0012	0.0005
t-test		-1.1298	-1.6876*	0.8523
Non-performing loans - HIGH	4,699	0.0013	0.0010	-0.0010
Non-performing loans - LOW	5,039	0.0014	-0.0008	-0.0011
Difference	340	-0.0001	0.0018	0.0001
t-test		-0.1641	2.6996***	0.1505

Loan loss provisions – HIGH	4,202	0.0014	0.0011	-0.0001
Loan loss provisions - LOW	5,536	0.0013	-0.0007	-0.0018
Difference	1,334	0.0001	0.0018	0.0017
t-test		0.1577	2.6093***	2.7708***
Bank profitability – HIGH	5,787	0.0020	0.0015	-0.0009
Bank profitability – LOW	3,951	0.0003	-0.0020	-0.0014
Difference	1,836	0.0017	0.0034	0.0005
t-test		2.6893***	4.9147***	0.8109

In table 7 we can see how country level variables are associated with CAR before, during, and after the loan announcement. Greater GDP per capital of the lender country indicates a lower CAR (-0.0016) for window (+2,+5), as t-test result is significant at 95% level. Rule of law is not statistically significant, while the political stability of the lender country is negatively associated with CAR (-0.0016) for window (-5,-2), which means borrowers tend to obtain a negative market response when receiving foreign syndicated lending from a country with less political stability.

Table 7: Univariate Analysis – Country-level Variables

	N	**CAR (-5,-2)**	**CAR (-1,+1)**	**CAR (+2,+5)**
GDP per capita – HIGH	7,196	0.0011	0.0003	-0.0015
GDP per capita - LOW	2,542	0.0020	-0.0005	0.0001
Difference	4,654	-0.0009	0.0008	-0.0016
t-test		-1.1896	1.0486	-2.2544**
Rule of law – HIGH	7,921	0.0014	0.0003	-0.0011
Rule of law - LOW	1,817	0.0011	-0.0008	-0.0008
Difference	6,104	0.0003	0.0010	-0.0003
t-test		0.4225	1.1803	-0.3918
Political stability - HIGH	7,849	0.0010	0.0003	-0.0012
Political stability - LOW	1,889	0.0026	-0.0011	-0.0004
Difference	5,960	-0.0016	0.0014	-0.0008
t-test		-1.9968**	1.6506*	-1.0837

Table 8 shows CAR difference based on deal-level variables. Length of maturity is significant for window (+2,+5) and negatively linked to CAR, with a difference of -0.0021 between high and low groups. Loan amount is significant for all three windows and suggests a reverse of positive correlation during the event announcement period. For window (-1,+1), higher loan amount is associated with 0.0056 lower CAR level, and the negative impact of cross-border SLs goes back to positive in window two days after the announcement. Whether the lending is Islamic finance has no valid impact on CAR, but if the deal is leveraged lending, CAR tends to be 0.0052 lower in window (-1,+1). Term loan has negative impact on CAR levels for windows before and after the announcement, while revolving credit only shows a significantly positive link for window (+2,+5). Numbers of managed arrangers are negatively associated with CAR before and after the event, but pose positive influence for window (-1,+1), with a CAR difference of 0.0022. This tendency is also valid for numbers of tier 1 agents.

Table 8: Univariate Analysis – Deal-level Variables

	N	CAR (-5,-2)	CAR (-1,+1)	CAR (+2,+5)
Length of maturity – HIGH	4,036	0.0007	0.0003	-0.0023
Length of maturity - LOW	5,702	0.0018	-0.0001	-0.0002
Difference	1,666	-0.0010	0.0003	-0.0021
t-test		-1.6397	0.4921	-3.4488***
Loan amount – HIGH	1,884	0.0074	-0.0044	0.0027
Loan amount - LOW	7,854	-0.0001	0.0011	-0.0020
Difference	5,970	0.0076	-0.0056	0.0047
t-test		9.6311***	-6.4730***	6.0067***
Islamic finance - YES	34	-0.0062	0.0025	-0.0071
Islamic finance - NO	9,704	0.0014	0.0001	-0.0010
Difference	9,670	-0.0076	0.0024	-0.0060
t-test		-1.4345	0.4182	-1.1605
Leveraged - YES	2,847	0.0012	-0.0036	-0.0017
Leveraged - NO	6,891	0.0014	0.0016	-0.0008
Difference	4,044	-0.0002	-0.0052	-0.0009

t-test		-0.2197	-6.8952***	1.2923
Term loan - YES	7,842	0.0009	0.0001	-0.0017
Term loan - NO	1,896	0.0030	-0.0002	0.0016
Difference	5,946	-0.0020	0.0003	-0.0033
t-test		-2.5902***	0.3393	-4.2342***
Revolving credit - YES	758	0.0024	0.0016	0.0016
Revolving credit - NO	8,980	0.0012	-0.0001	-0.0013
Difference	8,222	0.0012	0.0017	0.0029
t-test		1.0330	1.3174	2.5635**
No. of mandated arrangers – HIGH	4,142	0.0001	0.0013	-0.0017
No. of mandated arrangers – LOW	5,596	0.0023	-0.0008	-0.0006
Difference	1,454	-0.0022	0.0022	-0.0011
t-test		-3.4358***	3.1143**	-1.7112*
No. of Tier1 agents – HIGH	4,285	0.0012	0.0021	-0.0017
No. of Tier1 agents– LOW	5,453	0.0014	-0.0015	-0.0006
Difference	1,168	-0.0002	0.0036	-0.0011
t-test		-0.3914	5.2687***	-1.7941*

5.2 Multivariate results

We regress the cumulative abnormal returns of event windows to transaction characteristics with country and year fixed effects, based on the largest arranger, and firm size and EBIDTA are omitted automatically. The results (Table 9) suggest that shortly before and after the event announcement (-1,+1), bank profitability is negatively associated with CAR at the 1% significance level with a coefficient of -0.001, while GDP per capita has a negative impact as well but with a much smaller coefficient at the 5% significance level. Whether the loan is leveraged or not plays a negative role (-0.009) at the 1% significance level. The loan amount is also negatively linked to CAR, reporting a coefficient of -0.00002 at the significance level of 10%. Revolving credit plays a positive role (0.0175) at the significance level of 1%, which echoes the findings of Gasbarro et al. (2004) that the market welcomes SL announcements if they are revolving credit agreements as they provide more flexibility to borrowers.

Table 9: Event-level analysis based on largest arranger

	(1)	(2)	(3)
VARIABLES	**CAR(-5,-2)**	**CAR(-1,+1)**	**CAR(+2,+5)**
Firm size	0*	-0**	-0*
	(1.903)	(-1.980)	(-1.788)
Firm leverage	0.000151***	-3.85e-05	6.35e-05
	(3.186)	(-0.795)	(1.400)
Firm short-term debt	0.00547	-0.00693	0.00155
	(1.156)	(-1.432)	(0.342)
Firm tangibility	1.28e-05	-5.92e-06	7.19e-05
	(0.159)	(-0.0720)	(0.935)
Firm EBITDA	-0	0***	0***
	(-0.0103)	(2.716)	(2.697)
Bank size	5.11e-09**	-1.65e-10	2.45e-09
	(2.030)	(-0.0639)	(1.018)
Bank capital	0.00205	0.00110	-0.000542
	(1.601)	(0.842)	(-0.441)
Non-performing loans	0.000429	-0.00149	0.000293
	(0.302)	(-1.024)	(0.215)
Loan loss provisions	-0.00327	-0.000645	0.00167
	(-1.110)	(-0.214)	(0.594)
Bank profitability	-7.43e-05	-0.000775***	-0.000385*
	(-0.316)	(-3.219)	(-1.707)
GDP per capita	2.69e-07	-4.37e-07**	3.21e-07
	(1.308)	(-2.078)	(1.631)
Rule of law	-0.00389	-0.00137	-0.00166
	(-0.776)	(-0.267)	(-0.345)
Political stability	-0.00680*	-0.00249	-0.00622*
	(-1.734)	(-0.621)	(-1.657)
Length of maturity	4.04e-06**	1.81e-06	-3.22e-07
	(2.345)	(1.029)	(-0.195)
Loan amount	3.73e-05***	-2.20e-05*	-5.95e-06
	(2.978)	(-1.719)	(-0.497)
Islamic finance	0.00759	0.0111	0.00721
	(0.686)	(0.984)	(0.681)
Leveraged	0.000699	-0.00938***	-0.00418
	(0.204)	(-2.670)	(-1.273)
Term loan	0.00619	0.00141	0.00348
	(1.430)	(0.319)	(0.841)
Revolving credit	0.00710	0.0175***	-0.00325
	(1.117)	(2.686)	(-0.535)
No. of Tier1 agents	0.000114	0.000415	0.000345
	(0.247)	(0.878)	(0.780)
No. of mandated arrangers	-0.000413	-0.000506	-0.000515
	(-0.667)	(-0.799)	(-0.870)
Crisis	0.00218	0.0149	0.00681
	(0.0607)	(0.408)	(0.199)
Constant	-0.0701*	-0.0140	-0.0148
	(-1.877)	(-0.366)	(-0.415)
Observations	596	596	596
R-squared	0.111	0.181	0.124

Country fixed effects	YES	YES	YES
Year fixed effects	YES	YES	YES
VIF	8.33	8.33	8.33

t-statistics in parentheses
***** p<0.01, ** p<0.05, * p<0.1**

We then divide the sample into before and after crisis groups. For the pre-crisis sample (Table 10), firm leverage becomes significant at the 5% level with a negative coefficient of -0.0003 for event window (-1,+1). Bank size, bank capital and non-performing loans of the largest arranger also become significant. Bank size has a negligible negative impact at the 10% significance level while bank capital poses a positive effect (0.006) of the same significance. Non-performing loans is significant at the 1% level with a negative coefficient of -0.0124. The negative role of bank profitability is enhanced for the pre-crisis period, as the coefficient absolute value increases to 0.002 from less than 0.001, but maintains at the same significance level (1%). GDP per capita has dropped one significance level to 10%, while the negative impact more than doubles. Leverage loan and revolving credit are not significant during the before crisis period.

Table 10: Event-level analysis based on largest arranger (before crisis)

	(1)	(2)	(3)
VARIABLES	**CAR(-5,-2)**	**CAR(-1,+1)**	**CAR(+2,+5)**
Firm size	0	-0	0
	(1.251)	(-0.677)	(0.556)
Firm leverage	0.000274*	-0.000285**	3.21e-05
	(1.945)	(-2.186)	(0.230)
Firm short-term debt	0.0120	-0.0132	0.00755
	(1.181)	(-1.405)	(0.748)
Firm tangibility	0.000274	9.88e-05	-0.000322
	(0.538)	(0.210)	(-0.636)
Firm EBITDA	-0	0	0
	(-1.634)	(0.0883)	(1.145)
Bank size	1.90e-08***	-9.15e-09*	8.08e-09
	(3.558)	(-1.851)	(1.520)
Bank capital	-0.00259	0.00561*	0.000258
	(-0.774)	(1.813)	(0.0777)
Non-performing loans	0.0100**	-0.0124***	0.0134***

	(2.144)	(-2.877)	(2.895)
Bank profitability	0.000207	-0.00228***	0.000410
	(0.326)	(-3.896)	(0.650)
GDP per capita	1.10e-06**	-9.43e-07*	1.18e-07
	(2.102)	(-1.942)	(0.226)
Rule of law	0.0252**	-0.00213	-0.0104
	(2.517)	(-0.231)	(-1.049)
Political stability	-0.00460	-0.00302	-0.00623
	(-1.038)	(-0.737)	(-1.414)
Length of maturity	3.93e-06	1.16e-06	-7.92e-06**
	(1.116)	(0.357)	(-2.266)
Loan amount	-2.71e-05	-3.14e-05	2.58e-05
	(-0.967)	(-1.213)	(0.925)
Islamic finance	-0.0157	0.00473	-0.00272
	(-0.685)	(0.223)	(-0.119)
Leveraged	0.00576	0.000248	0.00799
	(0.755)	(0.0351)	(1.055)
Term loan	-0.00817	0.00516	0.0109
	(-1.005)	(0.687)	(1.354)
Revolving credit	-0.000796	0.00285	0.00647
	(-0.0643)	(0.249)	(0.527)
No. of Tier1 agents	-6.25e-05	0.000100	0.000312
	(-0.117)	(0.203)	(0.589)
Constant	-0.102**	0.0739*	-0.0346
	(-2.153)	(1.682)	(-0.731)
Observations	138	138	138
R-squared	0.225	0.205	0.205
Country fixed effects	NO	NO	NO
Year fixed effects	NO	NO	NO
VIF	1.83	1.83	1.83

t-statistics in parentheses
***** p<0.01, ** p<0.05, * p<0.1**
Note: LLP and No. of mandated arrangers are removed due to collinearity

For the period during and after the crisis (Table 11), all significant variables for the whole sample remain significant apart from GDP per capita. Also, the absolute values of their coefficients have increased except for Leverage Loan. Compared with the pre-crisis period, the significance of firm- and bank-level variables have declined, while deal-level characteristics such as loan amount, leveraged loan and revolving credit become significant, suggesting investors in capital markets focus more on information of specific transactions instead of borrower and lender characteristics.

Table 11: Event-level analysis based on largest arranger (during & after crisis)

	(1)	(2)	(3)
VARIABLES	**CAR(-5,-2)**	**CAR(-1,+1)**	**CAR(+2,+5)**
Firm size	0*	-0*	-0**
	(1.930)	(-1.652)	(-2.104)
Firm leverage	0.000122**	6.23e-06	7.08e-05
	(2.431)	(0.117)	(1.479)
Firm short-term debt	0.00508	-0.00807	0.00483
	(0.957)	(-1.433)	(0.952)
Firm tangibility	-2.09e-05	-1.90e-05	6.09e-05
	(-0.262)	(-0.225)	(0.800)
Firm EBITDA	-0	0***	0***
	(-0.0158)	(2.683)	(2.808)
Bank size	3.14e-09	-1.43e-10	2.41e-09
	(1.143)	(-0.0492)	(0.919)
Bank capital	0.00349**	9.47e-05	-0.000727
	(2.529)	(0.0647)	(-0.552)
Non-performing loans	-0.000732	-0.000731	-0.00112
	(-0.479)	(-0.452)	(-0.770)
Loan loss provisions	-0.00179	-0.00173	0.00483
	(-0.561)	(-0.511)	(1.589)
Bank profitability	-7.07e-05	-0.000842***	-0.000270
	(-0.281)	(-3.152)	(-1.120)
GDP per capita	3.63e-07	-3.18e-07	1.39e-07
	(1.511)	(-1.249)	(0.608)
Rule of law	-0.00315	-0.00401	-0.000664
	(-0.588)	(-0.708)	(-0.130)
Political stability	-0.0128**	-0.00181	-0.000184
	(-2.369)	(-0.315)	(-0.0355)
Length of maturity	3.12e-06	2.03e-06	3.59e-07
	(1.595)	(0.978)	(0.192)
Loan amount	5.06e-05***	-3.06e-05**	-8.10e-06
	(3.627)	(-2.065)	(-0.607)
Islamic finance	0.00818	0.0125	0.00735
	(0.702)	(1.009)	(0.660)
Leveraged	-0.000991	-0.00916**	-0.00599*
	(-0.266)	(-2.320)	(-1.683)
Term loan	0.00894*	0.00338	0.00144
	(1.790)	(0.639)	(0.303)
Revolving credit	0.00663	0.0251***	-0.00762
	(0.919)	(3.282)	(-1.105)
No. of Tier1 agents	-6.44e-05	3.38e-05	-4.55e-06
	(-0.246)	(0.122)	(-0.0182)

Constant	-0.0577***	0.0187	-0.0186
	(-2.929)	(0.894)	(-0.989)
Observations	469	469	469
R-squared	0.131	0.191	0.145
Country fixed effects	YES	YES	YES
Year fixed effects	YES	YES	YES
VIF	3.09	3.09	3.09

t-statistics in parentheses
***** p<0.01, ** p<0.05, * p<0.1**

6. Conclusions

This study investigates stock market response to cross-border SL announcements in 13 emerging economies and finds investors respond negatively to a borrower's stock return when receiving such lending from overseas banks. The negative reaction might be attributable to different reasons. First, the reputation of foreign banks, particularly those originating from the US and EU, has worsened dramatically since the financial crisis, which might trigger concerns among investors when loans are announced. Second, as SLs are extended on the basis of the relationship between the borrower and lender, obtaining funds from domestic banks indicate a sound relationship between the firm and these banks. SL announcements solely involving domestic lenders might signal that the firm is capable of obtaining stronger support from local resources under some circumstances. Third, an increase of bank numbers suggests higher re-contracting cost which might bear a negative impact on the stock return of the borrowers. To investigate the key factors affecting stock return we run both univariate and multivariate analysis on CAR for various event windows. We find that profitability of the largest arranger affects stock return negatively, and loan amount, GDP per capita of lender countries, whether a loan is leveraged, are all negatively associated with CAR. Whether the lending is revolving credit plays a positive role, perhaps due to lower re-contracting costs affiliated with such financing methods. Such findings provide important implications for firms in emerging economics when

they seek funds – to mitigate a negative impact in a capital market when receiving cross-border SLs, they should choose arrangers with lower profitability, from countries with similar GDP per capita level, reduce the loan amount for a single transaction, opt for revolving credit and avoid borrowing leverage loans. Furthermore, for local governments and financial regulators, market volatility triggered by cross-border SL announcements needs to be aware of and taken into account when making policies.

This research aims to fill the gap of insufficient studies on cross border capital flows, particularly cross-border SLs, and their association with borrowers' performance by providing empirical evidence from developing countries. So far very few studies have introduced firm-level data when researching the topic. There are limitations to this study. For instance, due to very limited information, we could not include private companies in the sample although loans extended to private companies account for a significant proportion of total SLs lent to firms in the 13 countries that constitute our sample.

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Appendix 1: Composition of cross-border SLs received by firms

Loan Description	Freq.	Percent
364d Revolver	6	0.27
364d/RevCred	2	0.09
364d/TL	5	0.22
Bridge Loan	42	1.87
Buyer Credit	4	0.18
Dly Drw Trm Ln	1	0.04
Export Credit	16	0.71
Float Rate Nts	1	0.04
Guarantee Fac.	3	0.13
Islamic Finance	33	1.47
Lease Financing	3	0.13
Leasing Faciliy	1	0.04
Letter of Cred	22	0.98
Mult Loan Fac	47	2.09
Other	1	0.04
Pre-Export Fin	14	0.62
Promissory Nts	1	0.04
Rev Cred Fac	168	7.49
RevCred/TLA	2	0.09
RevCred/Term Ln	159	7.09
Shrt-Tm Bank Nt	1	0.04
Standby Fac	2	0.09
Standby LOC	5	0.22
Term Bonds	1	0.04
Term Loan	1,689	75.27
Term Loan A	7	0.31
Term Loan B	2	0.09
Trade Facility	5	0.22
Transf Ln Fac	1	0.04
Total	**2,244**	**100**

Appendix 2: Loan package currency of loans borrowed by firms

Currency	Freq.	Percent
Australian Dollar	1	0.04
Belgian Franc	1	0.04
Brazilian Real	9	0.4
British Pound	12	0.53
Chinese Yuan	18	0.8
Colombian Peso	1	0.04
Deutsche Mark	2	0.09
EURO	250	11.14
Egyptian Pound	1	0.04
Hong Kong Dollar	4	0.18
Indian Rupee	15	0.67
Indonesian Rupiah	14	0.62
Japanese Yen	43	1.92
Malaysian Ringgit	20	0.89
Mexican Peso	16	0.71
Pakistani Rupee	11	0.49
Peruvian Sol	1	0.04
Russian Rouble	1	0.04
Singapore Dollar	1	0.04
South African Rand	14	0.62
Swedish Krona	2	0.09
Swiss Franc	1	0.04
Thai Baht	16	0.71
U.S. Dollar	1,787	79.63
Utd. Arab Em. Dirham	3	0.13
Total	**2,244**	**100**

Appendix 3: Year distribution of cross border SLs to firms in emerging markets

Year	Freq.	Percent
1998	52	2.32
1999	49	2.18
2000	54	2.41
2001	59	2.63
2002	59	2.63
2003	65	2.9
2004	102	4.55
2005	172	7.66
2006	155	6.91
2007	160	7.13
2008	145	6.46
2009	86	3.83
2010	125	5.57
2011	159	7.09
2012	137	6.11
2013	165	7.35
2014	163	7.26
2015	176	7.84
2016	161	7.17
Total	**2,244**	**100**

Appendix 4: Cross-border SL transactions by country

Country	Freq.	Percent
Brazil	195	8.69
China	85	3.79
Colombia	21	0.94
Egypt	14	0.62
India	645	28.74
Indonesia	218	9.71
Malaysia	107	4.77
Mexico	149	6.64
Pakistan	18	0.8
Peru	21	0.94
South Africa	153	6.82
Thailand	86	3.83
Turkey	532	23.71
Total	**2,244**	**100**

Chapter 3:

Impact of National Culture on Cross-Border Syndicated Loans: Evidence from G20 Banks

1. Introduction

In recent years, loan syndication has become a key source of global financing and a main arena where banks expand their business into overseas markets and internationalize their cross-border banking

activities. Data from the Bank for International Settlements show that the international syndicated lending market takes up around one third of total international financing, including bonds, commercial papers and equity issues (Gadanecz, 2004). Syndicated loans refer to lending jointly extended by multiple banks to one borrower whereby the syndicate develops around the arrangers, which are often the borrower's relationship banks (Gadanecz, 2004). Different from most financial products, firms of various credit spectrums, no matter whether they are privately held, or rated, with high yield or not, all use this form of finance (Sufi, 2007). In a syndicated loan deal, the borrower appoints one or several lenders as arrangers, around which the syndicate is formed. Apart from retaining a portion of the loan themselves, the arrangers are also in charge of bringing together some junior banks ("participants") to lend the money together, based on the terms specified by the loan.

The process of loan syndication demonstrates social characteristics that might be related to the cultural values held by the society where the participants are based. Such a financing method bears characteristics of relation banking (Dennis & Mullineaux, 2000; Gadanecz, 2004) that might reduce information asymmetry as the leading banks could provide more information about borrowers (Boot, 2000; Cerutti et al., 2015). Furthermore, such lending has a structure that allows the bank network to play an important role (Champagne, 2014; Sufi, 2007). The academic attention attached to SLs, especially cross-border SLs, has been very limited despite the increasing significance and popularity of such lending. Apart from information asymmetry and the bank network, prior literature studies also focus on bank balance sheet strength (Simons, 1993; Blank and Buch, 2010; Cerutti et al., 2015), corporate ownership structure (Lin et al., 2012), and borrower country characteristics (Godlewski and Weill, 2008; Cerutti et al., 2015) to investigate the determinants of loan syndication; nevertheless, few link banks' willingness to participate in loan syndication with national

culture, which helps to capture the complex and observable dynamics behind the managerial decision-making of bank risk-taking (Mourouzidou-Damtsa et al., 2017).

Developing countries have used SLs as a major financing method to source funds for various projects and firms, as SLs provide both delegated monitoring and portfolio diversification services (Eichengreen & Mody, 2000). This chapter aims to examine whether and how national culture, proxied by six dimensions of the Hofstede model, have an influence on the cross-border syndicated loan amount extended by banks to developing countries, by analyzing loan transactions from five of the largest banks in 19 countries of the G20 block between 2000 and 2017. The six dimensions are power distance, individualism versus collectivism, masculinity versus femininity (or tough versus tender cultures), uncertainty avoidance, long term orientation versus short term normative orientation, and indulgence versus restraint.

We hope to contribute to the existing literature concerning the role of national culture on financial behaviours and determinants of cross-bordering SL by filling the gap of the role of national culture in SL, and contribute to the theoretical literature on the determinants of bank overseas lending decisions. Previous studies have suggested these determinants could be lender balance-sheet strength (Simons, 1993; Cerutti et al, 2015) and macro-level characteristics such as bilateral trade (Blank and Buch, 2010). Kleimeier et al (2013) mention the role of geographical and cultural proximity in cross-border loans but only use distance as a proxy; furthermore, the study is not focused on syndicated lending. Information on the impact of national culture in cross-border SLs would be valuable to policy makers of both the borrowing emerging economies and G20 community when making decisions on whether and how to support this financing channel in the age of globalization.

The chapter is organized as follows: we start with literature and hypothesis development, then introduce our data, empirical methodology, summary statistics and empirical results, before finally drawing a conclusion.

2. Literature review and hypothesis development

Prior academic work documents that cultural values impact a wide range of financial activities. For instance, the cultural difference between countries is associated with stock market participation and stock price momentum (Guiso et al., 2008; Chui et al., 2010), bilateral economic exchange such as trade, portfolio investment and foreign direct investment (Guiso et al., 2009), venture-capital flows (Bottazzi et al., 2010), equity investment (Hwang, 2011), and mergers (Ahern et al., 2015). Additionally, there is a significant association between the national cultural values of individualism, hierarchy, trust and bank risk-taking behaviour (Mourouzidou-Damtsa et al., 2017) based on a sample of European banks between 1995 and 2014. Ahern et al. (2015) and Mourouzidou-Damtsa et al. (2017) use answers to three questions of the World Values Survey to proxy three core components of national culture. They also argue individualism, trust and hierarchy are core values across a variety of national culture indexes. Individualism and hierarchy are found to be positively associated with bank risk while trust is negatively related to risk (Mourouzidou-Damtsa et al., 2017)

SLs provide both delegated monitoring and portfolio diversification services (Eichengreen & Mody, 2000) and are closely related to banks' risk appetite. There are several studies on relationship lending and disintermediated debt characteristics of syndicated loans (Dennis & Mullineaux, 2000; Gadanecz, 2004), and drivers of syndicated lending decisions (Simons, 1993; Cerutti et al., 2015). Relation banking is regarded as a most direct solution to the problems of asymmetric

information (Boot, 2000), which causes adverse selection, moral hazard and credit rationing (Stiglitz & Weiss, 1981). The information asymmetry and relation between borrowers and leading banks, network between participant banks and leading arrangers, have all become pivots of the syndicated loan study. These social characteristics of SLs based on the relationship between borrower and key lender, and among lenders themselves, distinguish SLs from common bilateral loans and set the foundation of the interaction between different cultural dimensions and SL lending behaviours.

According to Hofstede[9], power distance is a dimension that measures "the degree to which the less powerful members of a society accept and expect that power is distributed unequally". In other words, it reflects acceptance of a social hierarchical order of power distribution. In countries with a low score in this category, citizens "strive to equalize the distribution of power and demand justification for inequalities of power". Higher bilateral egalitarian distance plays a negative role in cross-border financial activities such as equity and bond issuances, syndicated loans, and mergers and acquisitions (Karolyi, 2016). As past studies show, hierarchy is positively linked to risk-taking behaviour (Mourouzidou-Damtsa et al., 2017), and extending loans to overseas companies are riskier than domestic lending; consequently, we assume:

Hypothesis 1: *Power distance is positively linked to cross-border SL amount*

Individualism versus collectivism is a dimension that reflects a society's preference for a "loosely-knit" or "tightly-knit" social framework. If residents value individualism more than collectivism, they are expected to consider only themselves and close families instead of their relatives or certain ingroup members "to look after them in exchange for unquestioning loyalty". This reveals whether people define themselves

[9] Definition source: https://hi.hofstede-insights.com/national-culture

in terms of "I" or "we" for self-image in a social setting, according to Hofstede's definition. Although loan syndication bears a collaborative nature which indicates a country that values the "we" concept might prefer such a financing method, individualism is found to be positively associated with risk taking activities in the financial sector (Mourouzidou-Damtsa et al., 2017). Thus, we assume borrowers in a country which values individualism tend to take more risk by turning to overseas lenders for funding instead of domestic banks. Consequently:

Hypothesis 2: *Individualism is positively linked to cross-border SLs*

Hofstede defines the masculinity of a society as the preference for achievement, heroism, assertiveness and material rewards for success - a more competitive society in general[10]. Femininity represents an inclination for more "consensus-oriented" values, such as cooperation, modesty, caring for the weak and quality of life. The definition highlights the competitive nature of a masculine society, which indicates a preference for taking risks, while cooperation and social trust are attributes of a feminine society. We follow the findings of previous literature to assume:

Hypothesis 3: *Masculinity is positively associated with cross-border SL amount while femininity plays a negative role.*

The Uncertainty Avoidance dimension measures the extent that the residents of a society are happy with ambiguity and uncertainty[11]. The key concept that Hofstede used to explain this dimension is about how a society acts on an unknown future. Countries scoring high in this category are rigid to belief and behaviour codes, and are less tolerant of unorthodox actions and thoughts. Meanwhile, societies scoring a lower value practice more than principles. Given SLs are seen as a tool for banks to diversify risks and control uncertainty, and legal compliance is

[10] Definition source: https://hi.hofstede-insights.com/national-culture

[11] Definition source: https://hi.hofstede-insights.com/national-culture

an important factor affecting implementation of cross-border loan contracts, we assume:

Hypothesis 4: *Uncertainty avoidance is positively associated with cross-border SL amount.*

For the dimension of long term versus short term normative orientation, societies who score low prefer to maintain long term traditions and norms while hesitating to accept societal change. Meanwhile, countries that score high prefer a more pragmatic way and are generally more open to changes that help to better prepare for the future. Similar to the last hypothesis, we assume:

Hypothesis 5: *Long-term orientation versus short term orientation is positively associated with cross-border SL amount.*

The last dimension is indulgence versus restraint. According to Hofstede, indulgence suggests a society that "allows relatively free gratification of basic and natural human drives related to enjoying life and having fun". Additionally, restraint marks a society that "suppresses gratification of needs and regulates it by means of strict social norms"[12]. The definition links indulgence to more impulsive behaviours that prioritizes short term satisfaction, and restraint to a more conservative and traditional approach, which we assume would be more appreciated by the overseas G20 banks:

Hypothesis 6: *Indulgence versus restraint is negatively linked to cross-border SL amount.*

3. Data and Methodology

[12] Definition source: https://hi.hofstede-insights.com/national-culture

We use the Thomson One Banker SL records of overseas SLs to developing countries extended by five of the largest banks from each of the 19 countries included in the G20 community, ranked by FitchConnect based on their total assets at the end of 2016 (Appendix 1). We drop loans lent to their domestic countries to make sure all the loan transactions involve cross-border lending. As multiple banks could be involved in one observation, we follow the approach of Cerutti et al (2015), Giannetti and Laeven (2012) and Hale (2012) and divide loan volumes equally across mandate arrangers to calculate each bank's loan exposure from non-zero cross-border SL deals.

Furthermore, we follow Mourouzidou-Damtsa et al. (2017) to apply multilevel linear modelling that includes three levels of data: countries, banks and transactions. This methodology allows us to build a clustered structure, which applies weights to each country based on its subsample size. Multilevel models could capture both bank-level effects across countries and country-level relations.

To examine the relation between national cultural values and cross-border SLs we regress the SL amount of each transaction on cultural, country, transaction and bank characteristics:

$$
\begin{aligned}
Loan\ Amount_{\,i,j,d,t} &= \alpha + \beta(Cultural\ Variables)_j + \gamma(Country\ Variables)_{j,t} \\
&+ \theta(Transaction\ Variables)_{j,d,t} \\
&+ \delta(Bank\ Financial\ Variables)_{i,j,d,t} \\
&+ Year\ Fixed\ Effects + \varepsilon_{i,j,d,t}
\end{aligned}
$$

Dependent Variable

We use the syndicated loan amount of each transaction recorded on the Thomson One Banker database as the dependent variable after inflation adjustment.

Independent Variables

a. National cultural variables

We proxy national culture by using the Hofstede model, which consists of six dimensions and represents independent preferences for one state of affairs over another. The six dimensions based on employee value scores are: power distance that expresses the extent that the less powerful members of a society accept and expect that power is distributed unequally; individualism versus collectivism; masculinity versus femininity (or "tough versus tender" cultures); uncertainty avoidance; long term orientation versus short term normative orientation; and, indulgence versus restraint.

b. Country variables

In line with Mourouzidou-Damtsa et al. (2017), Ahern et al. (2015), Anginer et al. (2014), Fiordelisi et al. (2011), La Porta et al. (1997) and Li et al. (2013), we control for the country variables such as GDP per capita, domestic credit ratio against GDP, and legal difference. We calculate difference in these variables between borrower and bank countries. For all GDP data, real values are used after deducting the inflation factor, and national logarithm form is applied to make the variables comparable. The information is collected from the World Bank database.

To control the legal and institutional difference, we select two out of six Worldwide Governance Indicators compiled by the World Bank, and then calculate the difference between the borrower and lender country, and take the absolute values. The Worldwide Governance Indictors program provides a consistent and widely-accepted measure of governance among different countries. It captures six key dimensions – Voice and Accountability, Political Stability and Lack of Violence, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption. The Rule of Law and Regulation Quality are

more pertinent to cross-border loan deals compared with other indicators.

Table 1: Variable definitions and sources

Variable Name	Definition	Source
Dependent variable		
	Loan amount in million US dollars	Thomson One Banker
Cultural variables		
Power distance	The extent that the less powerful members of a society accept and expect that power is distributed unequally	Hofstede Insights
Individualism VS collectivism	Preference for a loosely-knit social framework or tightly-knit framework in society	Hofstede Insights
Masculinity VS femininity	A preference in society for achievement, heroism, assertiveness, and material rewards for success, or preference for cooperation, modesty, caring for the weak and quality of life	Hofstede Insights
Uncertainty avoidance	The degree to which the members of a society feel uncomfortable with uncertainty and ambiguity	Hofstede Insights
Long term VS short term	Long term orientation versus short term normative orientation	Hofstede Insights
Indulgence versus restraint	Indulgence stands for a society that allows relatively free gratification of basic and natural human drives related to enjoying life and having fun. Restraint stands for a society that suppresses gratification of needs and regulates it by means of strict social norms	Hofstede Insights
Bank variables		
Bank size	Natural logarithm of total bank assets	FitchConnect

Bank capital	Ratio of regulatory capital defined by Basel Committee against total assets	FitchConnect
Non-performing loans	Ratio of bank non-performing loans to total loans	FitchConnect
Loan loss provisions	Ratio of bank loan-loss provisions to net interest income	FitchConnect
Bank profitability	Return on average equity (net income divided by average equity)	FitchConnect
Country variables		
Economic difference	Difference of GDP per capita (PPP) between bank country and borrower country	World Bank
Outlook difference	Difference of sovereign credit ratings between bank country and borrower country	FitchConnect
Legal difference	Rule of law difference between bank country and borrower country	World Bank
Regulation difference	Difference in regulation quality between bank and borrower country	World Bank
Transaction variables		
Length of maturity	Length between announcement date and maturity date, calculated by days	Thomson One Banker
Spreads	Basis points charged by lenders above benchmark interest rates in initial pricing	Thomson One Banker
Leveraged	Dummy variable that equals to 1 if the syndicated loan is leveraged	Thomson One Banker

Term loan	Dummy variable that equals to 1 if the syndicated loan is a term loan	Thomson One Banker
Revolving credit	Dummy variable that equals to 1 if the syndicated loan is a revolving credit	Thomson One Banker
No. of mandated arrangers	Number of mandated arrangers for a syndicated loan transaction	Thomson One Banker

b. Transaction variables

For each deal, the dummy variable of whether the lending is leveraged, number of main participants, length of loan maturity, and whether a loan is Islamic finance, term loan or revolving credit would be included. The data come from Thomson One Banker database.

c. Bank financial variables

Banks have been playing an important role in such markets due to the significant gap in auditing, accounting and disclosure standards with developed countries (Eichengreen & Mody, 2000). In line with previous studies, such variables include: bank size (natural logarithm of total bank assets), bank capital (ratio of regulatory capital to total assets), bank non-performing loans (ratio of bank non-performing loans to total loans), bank loan-loss provisions (ratio of bank loan-loss provisions to net interest income), bank profitability (return on average equity). The data were collected from FitchConnect.

4. Summary Statistics

We collected 30,347 loan observations from Thomson One Banker. After merging the transactions with bank financials and country

economics, the number of observations was reduced to 13,425 due to missing values. Table 2 shows a summary of the variables. The average cross-border syndicated loan amount stood at $909 million with a standard deviation of 1,280. Loan amount for most of the transactions is below $5,000 million (Appendix 2). Among the 22 developing borrower countries, the majority of extended loans went to Turkey, China, Russia, India and Indonesia (Appendix 3). The panel is unbalanced as each country has different observation counts for each year. The 2015 mean scores for cultural variables range from 40.55 to 76.99 for these countries. Masculinity versus femininity is highly correlated with Uncertainty Avoidance (-0.6413), while Long term versus short term is very much correlated with Indulgence versus restraint (-0.8076), thus both masculinity versus femininity and long term versus short term are removed from regression to avoid the issue multicollinearity.

Table 2: Summary Statistics

VARIABLES	Obs	Mean	Std. Dev.	Min	Max
Loan amount (million $)	13,425	909.1	1,280	1.631	21,000
Panel A: cultural independent variables					
Power distance	13,425	76.99	10.53	49	104
Individualism VS collectivism	13,425	32.45	10.56	12	48
Masculinity VS femininity	13,425	50.45	10.52	34	73
Uncertainty avoidance	13,425	65.38	24.59	30	95
Long term VS short term	13,425	56.84	20.1	13.1	87.41
Indulgence VS restraint	13,425	40.55	19.81	0	100
Panel B: Loan-level independent variables					
Maturity length	13,425	1,514	1,301	4	11,688
Spreads	13,425	193.8	332.7	0	11,100
Leveraged	13,425	0.359	0.48	0	1
Term loan	13,425	0.773	0.419	0	1
Revolving credit	13,425	0.0574	0.233	0	1

No. of mandated arrangers	13,425	9.58	6.298	1	31
Panel C: Bank-level independent variables					
Bank size (million $)	13,425	1.444	0.884	0.000669	4.006
Bank capital %	13,425	14.65	3.086	8.36	172.5
Non-performing loans %	13,425	3.035	2.46	0	17.29
Loan loss provisions %	13,425	20.06	18.78	-131.2	218.2
Bank profitability %	13,425	8.942	10.81	-214.8	40.53
Panel D: Country-level independent variables					
Economic difference	13,425	20,906	12,058	-21,551	55,930
Legal difference	13,425	1.536	0.766	-1.003	3.202
Regulation difference	13,425	1.214	0.661	-1.121	2.937
Outlook difference	13,425	6.322	3.644	-5	18

5. Results

We use a multilevel model to regress the independent variables against loan amount, by grouping the observations by country first, then cluster them into different year groups. The regression results are shown in table 3. Power distribution of borrower country is statistically significant at the 10% level with a coefficient of 0.0018, suggesting social hierarchy and unequal distribution of power is positively linked to syndication. Preference of individualism or collectivism is significant at the 1% level with a coefficient of 0.011, which indicates preference over a loosely-knit social framework is affiliated with higher cross-border syndicated lending. Masculinity versus femininity is positively associated with loan amount (0.0056) at the significance level of 1%. The results indicate the more "masculine" a borrower country, the higher loan amount it would receive from a G20 main bank. Uncertainty avoidance is also positively linked to the lending amount with a coefficient of 0.0068, significant at the 1% level, proving loan syndication serves as an option to avoid uncertainty caused by information asymmetry between borrowers and lenders. The countries'

preference for long term against short term is also positively linked to the loan amount (0.0034), significant at the 1% level. This means the more a country prioritizes short term changes to long term tradition, the higher loan amount it tends to receive from G20 banks. The preference of indulgence against restraint is also significant at the 1% level, with a positive but weaker coefficient of 0.0041. This might be explained by the independent variable's strong link with Long term versus short term, as long term preference would favour financing via overseas channels and loan syndication. Compared with other cultural dimensions, individualism versus collectivism plays the biggest role.

We then divide the sample into two historical periods - before and after the global financial crisis - to check the robustness of our regression results. Power distance has increased its significance to the 1% level with a coefficient of 0.0079 before the crisis and lost its significance completely during and after the crisis. The strong positive link between individualism and loan syndication is valid for both before and after the crisis period (2007 and onwards), with little change in the coefficient. The effect of Masculinity versus femininity is only significant for the post-crisis period, with a coefficient of 0.0075 at the 1% significance level, while it is non-significant before the crisis. The significance level of uncertainty avoidance drops to 5% with almost the same coefficient before the crisis. The coefficient increases to 0.0088 after the crisis while the significance level recovers to 1%. The impact of long term versus short term is subdued for the period before 2007, as the coefficient has lost its significance. After the financial crisis, the positive impact strengthens as the coefficient rises to 0.0047 and significance level recovers to 1% level. Indulgence versus restraint plays a bigger role for the pre-crisis period with a coefficient of 0.0105, with the same significance level. For the post crisis period, this dimension is only significant at the 10% level, with a much lower coefficient of 0.0022. Our results suggest cultural variables such as individualism versus collectivism, uncertainty avoidance, and indulgence versus

restraint, have passed the robustness check as they remain positively and significantly associated with loan amount for both time periods.

Table 3: Regression Results

	(1)	(2)	(3)
VARIABLES	**Full Sample**	**Before Crisis**	**After Crisis**
Power distance	0.0018*	0.0079***	0.0009
	(-0.0010)	(-0.0023)	(-0.0011)
Individualism VS collectivism	0.0106***	0.0105***	0.0094***
	(-0.0012)	(-0.0029)	(-0.0013)
Masculinity VS femininity	0.0056***	0.0015	0.0075***
	(-0.0016)	(-0.0036)	(-0.0018)
Uncertainty avoidance	0.0068***	0.0049**	0.0088***
	(-0.0010)	(-0.0021)	(-0.0011)
Long term VS short term	0.0034***	0.0032	0.0047***
	(-0.0011)	(-0.0023)	(-0.0012)
Indulgence VS restraint	0.0041***	0.0105***	0.0022*
	(-0.0011)	(-0.0025)	(-0.0013)
Economic difference	-0.0000**	-0.0000*	0.0000
	(0.0000)	(0.0000)	(0.0000)
Legal difference	0.1710***	0.3090***	0.0774*
	(-0.0360)	(-0.0754)	(-0.0413)
Outlook difference	-0.0120**	-0.0025	-0.0041
	(-0.0055)	(-0.0121)	(-0.0065)
Bank size	0.0263**	-0.0096	0.0305***
	(-0.0102)	(-0.0292)	(-0.0109)
Non-performing loans	-0.0146***	0.0401**	-0.0178***
	(-0.0056)	(-0.0181)	(-0.0062)
Bank profitability	0.0013	0.0015	-0.0002
	(-0.0010)	(-0.0016)	(-0.0015)
Bank capital	-0.0019	0.0340**	-0.0024
	(-0.0034)	(-0.0163)	(-0.0036)
Loan loss provisions	-0.0003	0.0006	-0.00128*
	(-0.0007)	(-0.0014)	(-0.0008)
Leveraged	-0.0344**	-0.1230***	-0.0293*
	(-0.0159)	(-0.0444)	(-0.0170)
Spreads	-0.0002***	0.0000	-0.0002***
	(0.0000)	(-0.0001)	(0.0000)
Term loan	-0.4730***	-0.4600***	-0.4760***
	(-0.0194)	(-0.0512)	(-0.0209)

Revolving credit	-0.2590***	-0.0888	-0.3070***
	(-0.0346)	(-0.0792)	(-0.0383)
Length of maturity	0.0003***	0.0003***	0.0003***
	(0.0000)	(0.0000)	(0.0000)
No. of mandated arrangers	0.1070***	0.0845***	0.1130***
	(-0.0016)	(-0.0034)	(-0.0017)
Constant	2.9080***	2.0790***	3.2990***
	(-0.2370)	(-0.5560)	(-0.2570)
Observations	13,425	2,182	11,243
Number of groups	18	15	18
Year Fixed Effects	YES	YES	YES
VIF	6.65	3.99	2.74
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1			

We then divide lenders into two groups concerning whether they were listed as global, systemically important banks (GSIBS) in 2017 (Appendix 4) to test the robustness of our regression results. As shown in Table 4, power distance keeps the significance at 10% for GSIBS with a slightly higher coefficient (0.0020) but loses the significant impact for non-GSIBS. Individualism versus collectivism is significant for both bank categories and the significance level remains the same with the full sample. Its positive effect to lending amount is stronger for GSIBS while weaker for non-GSIBS. The impact of masculinity versus femininity declines slightly for GSIBS while the significance level is still at 1%. For non-GSIBS, however, the variable loses its significance. Similarly, uncertainty avoidance also keeps its influence for GSIBS but becomes non-significant for non-GSIBS. Long term versus short term dimension records lower the significance level and coefficients for both bank types, while indulgence preference against restraint remains positively associated with the loan amount for GSIBS, with a coefficient of 0.004 at the 1% level, but loses significance for the sub-sample composed of GSIBS. This robustness check proves borrower countries' preference for individualism and uncertainty avoidance are

significantly associated with cross border SLs across both bank categories, while the other cultural dimensions only remain significant for GSIBS.

Table 4: Robustness check

	(1)	(2)	(3)
VARIABLES	**Full Sample**	**Non-GSIBS**	**GSIBS**
Power distance	0.0018*	-0.0028	0.0020*
	(-0.0010)	(-0.0026)	(-0.0011)
Individualism VS collectivism	0.0106***	0.0091***	0.0116***
	(-0.0012)	(-0.0028)	(-0.0013)
Masculinity VS femininity	0.0056***	-0.0023	0.0047***
	(-0.0016)	(-0.0040)	(-0.0017)
Uncertainty avoidance	0.0068***	0.0040*	0.0067***
	(-0.0010)	(-0.0022)	(-0.0011)
Long term VS short term	0.0034***	0.0029	0.0025**
	(-0.0011)	(-0.0027)	(-0.0012)
Indulgence VS restraint	0.0041***	0.0032	0.0040***
	(-0.0011)	(-0.0030)	(-0.0012)
Economic difference	-0.0000**	0.0000	-0.0000***
	(0.0000)	(0.0000)	(0.0000)
Legal difference	0.1710***	0.0097	0.2380***
	-(0.0360)	(-0.0746)	(-0.0391)
Outlook difference	-0.0120**	-0.0310**	-0.0216***
	(-0.0055)	(-0.0131)	(-0.0062)
Bank size	0.0263**	0.0766***	-0.0019
	(-0.0102)	(-0.0225)	(-0.0124)
Non-performing loans	-0.0146***	-0.0046	-0.0081
	(-0.0056)	(-0.0098)	(-0.0068)
Bank profitability	0.0013	-0.0032*	0.0014
	(-0.0010)	(-0.0018)	(-0.0013)
Bank capital	-0.0019	0.0027	-0.0007
	(-0.0034)	(-0.0080)	(-0.0039)
Loan loss provisions	-0.0003	-0.0008	-0.0007
	(-0.0007)	(-0.0012)	(-0.0008)
Leveraged	-0.0344**	0.0172	-0.0310*
	(-0.0159)	(-0.0333)	(-0.0181)
Spreads	-0.0002***	-0.0001***	-0.0002***

	(0.0000)	(0.0000)	(0.0000)
Term loan	-0.4730***	-0.3800***	-0.4910***
	(-0.0194)	(-0.0421)	(-0.0218)
Revolving credit	-0.2590***	-0.1220	-0.2790***
	(-0.0346)	(-0.0788)	(-0.0384)
Length of maturity	0.0003***	0.0003***	0.0002***
	(0.0000)	(0.0000)	(0.0000)
No. of mandated arrangers	0.1070***	0.1110***	0.1050***
	(-0.0016)	(-0.0032)	(-0.0017)
Constant	2.9080***	3.4960***	3.5270***
	(-0.2370)	(-0.5000)	(-0.2870)
Observations	13,425	2,767	10,658
Number of groups	18	18	9
Year Fixed Effects	YES	YES	YES
VIF	6.65	5.54	8.00
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1			

6. Conclusions

We collected records of cross border syndicated loans extended by G20 banks to 22 developing countries from 2000 to 2017, and applied a multi-level linear regression to investigate the relation between loan amount and cultural features of borrower countries, while controlling for transaction and bank level variables. We found cultural dimensions of borrower countries play a significant role in receiving funds via overseas syndication. Developing countries with higher preference of unequal power distribution, a loosely organized society that prioritizes individuals and their close families, uncertainty avoidance, masculinity, short term effects and indulgence against restraint, tend to get more syndicated loans from major G20 banks which are located out of their territories. Furthermore, among them, the cultural dimensions of individualism versus collectivism and uncertainty avoidance are the most robust and have the biggest impact. Our findings indicate financial regulators from both developing borrower countries and the

G20 block need to address the bias in lending decisions due to cultural differences. To benefit the local real economy and control lending risks, cross-border SLs should be channelled to developing regions with less "popular" cultural characteristics among the banks. For instance, lendings to those societies that prefer collectivism, practice against principles, femininity, long-term traditions and restraint should be encouraged via internally adjusted risk appetite inside the banks and external financial regulatory policies.

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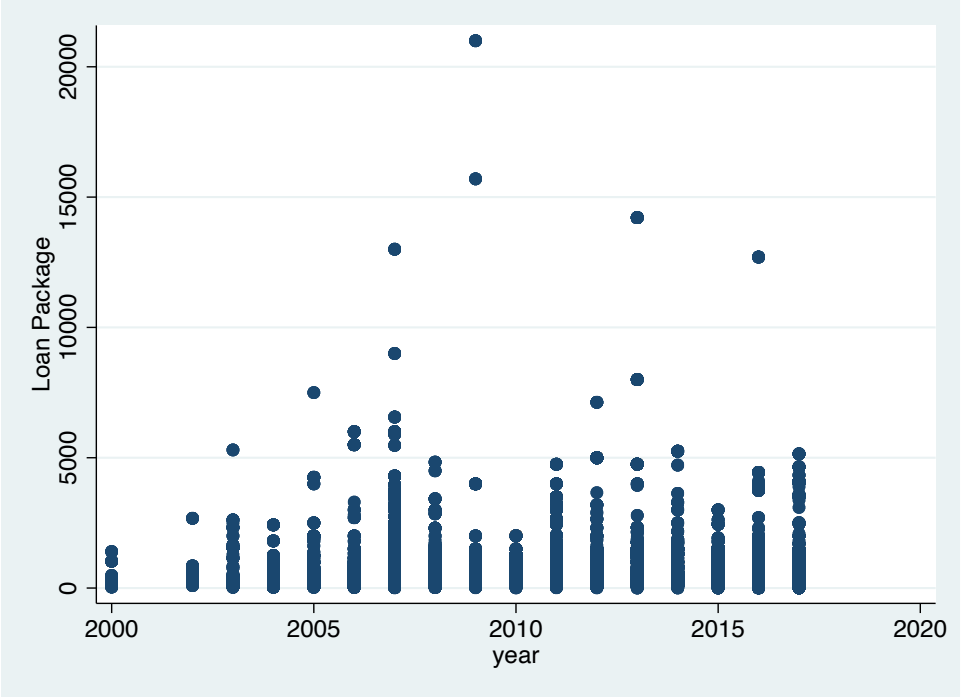
Appendix 1: List of the five largest banks by total assets for each country (source: FitchConnect, 2016)

Country	Bank Name
Argentina	Banco de la Nacion Argentina Banco de Galicia y Buenos Aires S.A. Banco de la Provincia de Buenos Aires Banco Santander Rio S.A. Banco Macro S.A.
Australia	Australia and New Zealand Banking Group Limited Commonwealth Bank of Australia Westpac Banking Corporation National Australia Bank Limited Macquarie Group Limited
Brazil	Banco do Brasil S.A. Caixa Economica Federal Banco Bradesco S.A. Banco Santander (Brasil) S.A. BTG Pactual Group
Canada	Royal Bank of Canada Toronto-Dominion Bank (The) The Bank of Nova Scotia Bank of Montreal Canadian Imperial Bank of Commerce (CIBC)
China	Industrial and Commercial Bank of China Limited China Construction Bank Corporation Agricultural Bank of China Limited Bank of China Limited

	Bank of Communications Co., Ltd.
France	BNP Paribas S.A. Credit Agricole Societe Generale S.A. Groupe BPCE Credit Mutuel
Germany	Deutscher Sparkassen- und Giroverband e.V. Deutsche Bank AG Genossenschaftliche FinanzGruppe Sparkassen-Finanzgruppe (Sparkassen) Bundesverband der Deutschen Volksbanken und Raiffeisenbanken (BVR)
India	State Bank of India ICICI Bank Ltd. HDFC Bank Limited Punjab National Bank Bank of Baroda
Indonesia	PT Bank Mandiri (Persero) Tbk PT Bank Rakyat Indonesia (Persero) Tbk PT Bank Central Asia Tbk PT Bank Negara Indonesia (Persero) Tbk PT Bank CIMB Niaga Tbk
Italy	UniCredit S.p.A. Intesa Sanpaolo S.p.A. Banca Monte dei Paschi di Siena SpA Banco BPM SpA Unione di Banche Italiane S.p.A.
Japan	Mitsubishi UFJ Financial Group, Inc. Japan Post Holdings Co., Ltd. Mizuho Financial Group, Inc. Sumitomo Mitsui Financial Group, Inc. The Norinchukin Bank
Mexico	BBVA Bancomer, S.A., Institucion de Banca Multiple, Grupo Financiero BBVA Bancomer Banco Santander (Mexico) S.A., Institucion de Banca Multiple, Grupo Financiero Santander Banco Nacional de Mexico, S. A. Banco Mercantil del Norte, S. A., Institucion de Banca Multiple, Grupo Financiero Banorte HSBC Mexico, S.A. Institucion de Banca Multiple, Grupo Financiero HSBC
South Korea	KEB Hana Bank

	Woori Bank Kookmin Bank Shinhan Bank Industrial Bank of Korea
Russia	Sberbank of Russia Bank VTB (JSC) Gazprombank (Joint-stock Company) Public Joint-Stock Company Bank Otkritie Financial Corporation Russian Agricultural Bank
Saudi Arabia	National Commercial Bank Al Rajhi Bank SAMBA Financial Group Riyad Bank Banque Saudi Fransi
South Africa	Standard Bank Group Limited Barclays Africa Group Limited Nedbank Group Limited Nedbank Limited PSG Group Ltd
Turkey	T.C. Ziraat Bankasi A.S. Turkiye Is Bankasi A.S. Turkiye Garanti Bankasi A.S. Akbank T.A.S. Koc Finansal Hizmetler A.S.
United Kingdom	HSBC Holdings plc Barclays plc Lloyds Banking Group plc The Royal Bank of Scotland Group plc Standard Chartered PLC
United States	JPMorgan Chase & Co. Bank of America Corporation Wells Fargo & Company Citigroup Inc. Morgan Stanley

Appendix 2: Loan amount of transactions across years



Appendix 3: Frequencies and percentage of observations by borrower country

Domicile Nation Name	Freq.	Percent	Cum.
Argentina	124	0.92	0.92
Bangladesh	2	0.01	0.94
Brazil	954	7.11	8.04
Bulgaria	52	0.39	8.43
China	2,021	15.05	23.49
Colombia	82	0.61	24.1
Croatia	43	0.32	24.42
El Salvador	4	0.03	24.45
India	1,680	12.51	36.96
Indonesia	1,252	9.33	46.29
Malaysia	340	2.53	48.82
Mexico	773	5.76	54.58

Pakistan	4	0.03	54.61
Peru	136	1.01	55.62
Philippines	226	1.68	57.3
Romania	73	0.54	57.85
Russia	1,903	14.18	72.02
Serbia	6	0.04	72.07
Thailand	155	1.15	73.22
Turkey	3,411	25.41	98.63
Venezuela	15	0.11	98.74
Vietnam	169	1.26	100
Total	13,425	100	

Appendix 4: G-SIBs as of November 2017 listed by Bank for International Settlements according to required levels of additional capital buffers[13]

Tier	Bank name
5 **(3.5%)**	(Empty)
4 **(2.5%)**	JP Morgan Chase
3 **(2.0%)**	Bank of America Citigroup Deutsche Bank HSBC

[13] source: https://www.fsb.org/wp-content/uploads/P211117-1.pdf

2 **(1.5%)**	Bank of China Barclays BNP Paribas China Construction Bank Goldman Sachs Industrial and Commercial Bank of China Limited Mitsubishi UFJ FG Wells Fargo
1 **(1.0%)**	Agricultural Bank of China Bank of New York Mellon Credit Suisse Groupe Crédit Agricole ING Bank Mizuho FG Morgan Stanley Nordea Royal Bank of Canada Royal Bank of Scotland Santander Société Générale Standard Chartered State Street Sumitomo Mitsui FG UBS Unicredit Group

Conclusion

The thesis aims to fill the gap and study the determinants and impact of cross-border syndicated loans, one of the main components of cross-border capital flows, by analysing empirical evidence from emerging countries. The first chapter examines factors that determine cross-border SL from China during the period 2006-2014 across 68 countries. Expected credit risk is found to be a key driver of Chinese banks' overseas syndication, along with government ownership, free riding, compensation for limited physical presence in borrower countries, the lowering of information asymmetries and diversification of the lending portfolio. Chinese banks tend to cluster together in a syndicate rather than partnering with a foreign-owned bank, and motivations are different for SLs to developed and developing countries. The second chapter investigates how the market reacts to foreign syndicated loan announcements in emerging economies via event study methodology, the results of which suggest cross-border SLs trigger significant negative market response to the borrowers' stock return, which might be attributable to different reasons. We find that the profitability of the mandated arrangers affects stock return negatively; in the meanwhile, the loan amount, GDP per capita of lender countries, and whether a loan is leveraged or not, are all negatively associated with CAR. Whether the lending is revolving credit plays a positive role, perhaps due to lower re-contracting cost affiliated with such a financing method. The third chapter studies how the national culture of a developing country affects banks' decisions to extend cross-border SLs into that area, by analysing loans extended by major banks from G20 countries from 2000 to 2017. The results of multilevel linear regressions show the cultural dimensions of borrower countries play a significant role in the funding amount received from the main foreign banks, as developing countries that prefer individualism, uncertainty avoidance, masculinity, short term effects and indulgence tend to obtain more cross-border SLs.

My research aims to help policy makers, businesses and banks to better understand the potential risks and consequences when using SLs as a financing method, and enhance global coordination over financial stability in relation to loan syndication, against the backdrop of fluctuation and uncertainties in the global financial market. Some findings provide implications for firms in emerging economics when they seek funds. Furthermore, local governments and financial regulators need to be aware of the impact concerning the credit risk level and free riding behaviours of lenders, market volatility following loan announcements, and the inherent national culture when making policy decisions.

There are limitations of this study. For instance, due to very limited information, we could not include private companies in the samples although loans extended to private companies account for a significant proportion of total SLs lent to firms in developing countries. Also, like all the loan transaction data samples, those denied loan syndication deals are not recorded. And for developing countries a main part of an SL is used to finance infrastructure projects registered under local governments themselves or their vehicles. For future research we suggest exploring more methods to incorporate these missing pieces for studies on SL determinants and impact to gain a more complete picture of the research questions.

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